

ASPECTS OF THE ACQUISITION OF ORALITY AND LITERACY
IN KENYAN PRIMARY SCHOOL CHILDREN

By

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This is the study of the acquisition of English and Kiswahili language skills by Kenyan primary school students. The students investigated were from Nairobi and Mombasa, two major urban centers of significantly different populations. The Mombasan students were typically native speakers of Kiswahili or Arabic and were largely Muslim in religion and culture. The Nairobi students spoke any one of over 20 different languages natively and were more "western" in religion and culture.

Over 700 students in standards 6 through 8 ranging in age from 12 through 17 were tested with a modified version of the Test of Syntactic Abilities (TSA). The TSA examines the knowledge of syntactic rules and structures through a forced choice sentence matching and selection format. It was administered in English and Kiswahili.

The motivation for this research stems from the educational and linguistic history of Kenya. The country's leadership has long recognized the need for both national identity and international participation and has fostered the use of Kiswahili for the former goal and English for the latter. Tactically, this is implemented by making English the language of instruction and Kiswahili a required subject in school. It is then a matter of some importance to determine the efficacy of this policy.

Results of the present research are viewed within the context of both Kenya's educational goals and current theory of language acquisition. Comparisons are made between performance on the TSA and the school system's protocols and assessments relative to language and academic achievement. Data are also interpreted in the context of variables associated with language acquisition: orality and literacy, native language affects, and various environmental factors.

Analyses of the results suggested that literacy and access to a literate mode of representing language contribute to the acquisitional process in important ways. The results indicate that a large subgroup of the Kenyan students tested is dealing with both English and Kiswahili using oral language strategies rather than syntactic processing associated with literate linguistic competence.

It is suggested that an increased emphasis on reading and literacy may well contribute to the attainment of the linguistic goals of Kenya.

CHAPTER I

INTRODUCTION

The research described in this document is the result of an extensive survey of the linguistic capacities of upper primary school students in Kenya. The research was conducted during my residence in the principal cities of Nairobi and Mombasa during the 1984-1985 academic year.

The impetus for the research plan came from educational statistics and comments made by Kenyan educators which indicated that the drop-out and recidivism rates at the upper primary school level are disturbingly high despite what appears to be well motivated and intelligent pedagogical procedures. Consider, for example, the following statement contained in the official Development Plan for the years 1984-1988.

In 1983 primary school enrollment was estimated to be 4.3 million. This figure implies that nearly 93 percent of the primary school-age population was in school. However, this seemingly high enrollment ratio underestimates the problem of extensive repetition and drop-out which constitutes a drain of resources. (Republic of Kenya, 1983 p. 150)

The drain on both the country's human and economic resources is immeasurable. The Kenyan government has been deeply and seriously committed to developing its human

resource potential principally through universal primary education since independence in 1963. Its current expenditure to education represents over 7 percent of the yearly gross domestic product. Most of this money goes toward maintaining and expanding the primary school system.

Given these general facts, my interest was in developing a research project to investigate possible linguistic etiologies related to academic failure. I was interested, in particular, in determining whether such causes could be related directly to specific levels of linguistic competence associated with the language of instruction--in this case English--or to developmental factors associated with language acquisition in general. This last consideration required that I investigate native language development. For this, I chose Kiswahili. These choices were dictated largely by the language policies effected in the Kenyan educational system itself.

Kenya has an official language policy which makes the educational system unique. English is the country's official language and is used in education as the principal instructional medium in most schools beginning at Standard 3 (prior to that instruction can be in either the mother-tongue of the community or Kiswahili), but in many schools as early as Standard 1. However, English is spoken natively by probably less than 3 percent of the population. In fact, it is not even the most frequently acquired second language for the majority of the citizenry. English was first

introduced into Kenya by European missionaries toward the end of the eighteenth century. Even though its presence in the country has been long, it has never been regarded as anything other than a foreign tongue. English is used only, by those who know it, in highly restricted contexts, e.g., when speaking to foreigners, in official government business, and in education.

The language that is used most frequently as a second language by an estimated 63 percent of the population (Wanyoike, 1982) is the country's national language, Kiswahili. Kiswahili is taught as a subject in all schools beginning in Standard 1 but is not used as an instructional medium in any school beyond Standard 3 in school. It is spoken natively by a high percentage of the population living along the coastal strip of the country's Coast Province which includes the Mombasa township.

I conducted my research in schools in two areas of the country where the linguistic and ethnic composition of the populations is quite distinct. In Nairobi, the population is ethnically, linguistically, and socially heterogeneous. Mombasa, by contrast, is more homogeneous with respect to these factors. Its population is largely ethnically Swahili.

The language tests used in this research were formulated from the screening test of The Test of Syntactic Abilities (TSA) developed by Quigley et al. (1978). Both an English version and a Kiswahili version were administered to

primary school students in Nairobi and Mombasa. The tests were administered to approximately 1,800 primary school students. The results reported here are for the 723 students who were in the upper primary levels in school (Standards 6-8) and who were between the ages of 10 and 17 years old.

I selected the TSA test because not only does it cover a wide range of syntactic structures in English, it provides information which indicates how individuals are processing these structures. This aspect of the test is discussed at length in this dissertation.

In this research, I was not interested in determining the relationship between academic performance and the knowledge of the forms of particular grammatical rules. In principle, I agree with Jerome Bruner's position that the rules of grammar, as they have so far been postulated by linguists and grammarians, do not even closely resemble the psychological laws of language production and comprehension (1975). What I was concerned with was determining what it was that students knew (or did not know) about English or Kiswahili and then relating this knowledge to certain aspects of academic performance.

What I truly expected to find was a fairly strong confirmation of the hypothesis that students' academic performance in Kenya is related directly to the extent of their specific knowledge of English and not to language development in general (with some possible exceptions). As

it turned out, only half of this expectation was confirmed by the results. The results showed that the students who were not succeeding well in school did in fact perform poorly as well on the English version of the TSA. However, these same students performed poorly on the Kiswahili version of the TSA even when it was their native tongue. This result was especially startling in view of the ages of the students (10- to 17-years-old). The ages of these students would suggest that they were old enough to have acquired a fairly accurate approximation of the "adult" grammar of their native language.

As I was considering these results, I recalled that somewhere along the way I had come to read the work of Greenfield (1972), Greenfield and Bruner (1966) and Scribner and Cole (1973) which suggested that certain aspects of linguistic knowledge and cognitive development were affected by literacy. This work, and the more recent research of the relationships between the attainment of literacy and the acquisition of language which I review in this dissertation, led me to posit an explanation of the Kenyan data that is based largely on the view that literacy affects the acquisition of language in rather specific and important ways. This view has important implications for linguistics and language description as well as to education planning and curriculum development in Kenya.

CHAPTER II
THE ROLE OF LANGUAGE AND LITERACY IN
KENYAN PRIMARY EDUCATION

The Development of Western Literate Education

Prior to Arabic and European settlement in East Africa, there was no written body of literature in any of the indigenous languages of this area. Educational systems, therefore, were non-literate systems. It was only under European influence that education came to be associated with the particular type of literate education that developed in Europe just before the turn of the century.

Western literate education was first introduced into Kenya in 1799 by the Church Mission Society of England. The Society, an evangelical wing of the Church of England, established its first school at Rabai Mpia, near Mombasa, on the eastern shore of the country. For the next hundred years the number of mission schools increased. The first goal of the mission schools was to convert Africans to Christianity. However, in time, this goal was incorporated into a larger one: widescale social change. As Anderson (1970 p. 10) has observed,

Once mission settlements became established in Africa, the possibility of using the school as an agent of 'controlled change' was quickly recognized. The western 'institution' of the

'elementary school' was thus transferred to parts of British Africa almost immediately after its inception in England and the development of church-controlled elementary schools in British Africa took place alongside the development of such schools in Britain, being strongly influenced by them. In Britain the effects of industrialization had caused a great need for mass education, but it was education designed to prepare children for an urban life and for highly specialized occupations.

As education expanded in industrial England, so too did it expand in Africa. For the time that they operated in small communities, the mission schools were able to develop materials in local languages suitable to their main curriculum goals of providing moral and religious education. However, as the number of schools increased and the curriculum expanded to include additional subjects, there came to be more reliance upon English as the instructional medium. The amount of time needed to develop literacy and educational materials in a large number of languages was so great as to make this task impractical for the schools' perceived immediate purposes (Urch, 1968). From early on, literacy was equated with learning a foreign language and learning in a foreign language.

The schools, in essence, were foreign in every way save for the students themselves. This situation caused problems. It has generally been agreed that the schools were disruptive culturally and socially. Urch (1968 p. 11) for example, contended that

the early schools under the control of various missionary groups did not represent or reflect the views of the existing social order. Educational goals, normally determined by a society on the

basis of traditional values and ideals as a means of preserving and developing the existing society, were determined by Europeans. The schools were not a unifying factor but an agent of social differentiation.

As such, they were not embraced uncritically by the indigenous populations. Despite the destabilizing influence the schools exerted on the existing social structures, and much criticism of this influence by local leaders, the mission schools flourished over time.

They did so in large part as a response to the emerging foreign economy that accompanied expanded European settlement in the country. The growth and spread of mission schools accelerated only when it became obvious that Europeans were controlling and reshaping the African economy without the direct participation of the African population itself.

Shortly before the turn of the century and for several decades thereafter, white settlers arrived in Kenya in large numbers. The British government had, at great expense, built a railroad from the coast of Kenya at Mombasa inland to lake Victoria. Consequently, in order to offset the cost of the railroad to the taxpayers in England, they decided on a policy to subsidize settlement in the country's interior regions (Harlow, 1965 Chpt. 1).

European settlement brought with it the demand for labor and the Africans, wanting to participate in this newly developing economy, saw education as their entree into the labor market. As early as 1909, according to Urch (1968

p. 27), "natives of the Kikuyu tribe centered near Nairobi approached the Church Missionary Society and asked to be taught to read and write." Once it became apparent that Europeans intended to settle in Kenya the Africans "realized the significance of education, and took action themselves" (Anderson, 1970 p. 108). Local communities donated their land, labor and materials and built schools and in so doing "ensured the successful development of the schools" (Anderson, 1970 p. 108).

The history of education in Kenya, at this point, could still have developed more in harmony with indigenous non-European systems. Once local communities took charge of establishing their own schools, they could have continued to develop curricula to match the communities' needs. This was, however, not to be. The education of Africans became a matter of colonial policy.

At the same time that the interest in western education developed among the indigenous people, the colonial government began to realize the necessity of training Africans, for the influx of settlers had given tremendous impetus toward trade and development. (Urch, 1968 p. 27)

The colonial government turned to the mission schools for help in furthering literate western education among the African population. The mission schools were offered financial assistance in turn for their cooperation.

In 1919, a report was issued by the director of the Education Commission of the East Africa Protectorate. In this report, the director proposed the establishment of a two-year primary school course with a curriculum consisting

of reading, writing, and arithmetic which was to be taught in either Kiswahili or another local language. In addition, a five year post-primary course was to be established and offered through boarding schools. The curriculum was to be in English, along with courses in Kiswahili composition. English was to succeed literacy training in local languages during the five year post-primary course "both on patriotic and practical grounds" (East Africa Protectorate, 1919 p. 8). There was one major and significant caveat to this overall plan: admission to post-primary school required knowledge of English!

Before the education of Africans became both a matter of economics and of British government policy, any debate as to the choice of language for education was largely an academic one. However, once African education became an issue to be dealt with administratively, deciding a language for education became a problem. Initially, the debate over the choice of a language or languages for education was confined to the "African Question" which had emanated from Britain's decision to administer the colony of Kenya. The mission of the colonial administration was clear.

There can be no room for doubt that it is the mission of Great Britain to work continuously for the training and education of the Africans towards a higher intellectual, moral, and economic level than that which they had reached when the Crown assumed the responsibility for the administration of this territory. (Great Britain Colonial Office, 1925 p. 10)

The "civilizing" mission of Great Britain amounted to the inculcation of western values through the promotion of

literacy in the language in which these values were so indelibly etched.

Britain's involvement in World War I created a labor shortage in Kenya which in turn led to the first great migratory influx of Indians into the country. By 1921, the Indian population outnumbered the European (settler) population by about two to one (Bennett, 1963 p. 51). Africans were being displaced rapidly in the labor force by the Indian immigrants and a new controversy arose. The potentially destabilizing influence of this new and large immigrant population was brought to the attention of the colonial government. The government decided on a policy to expand educational facilities for the purpose of educating Africans and encouraged the mission schools to educate their African pupils for industrial pursuits in order to "discourage Asians from coming to the colony" (Urch 1968 p. 46). It was the government's attitude that

Primarily Kenya is an African territory, and His Majesty's Government thinks it necessary definitely to record their considered opinion that the interests of the African natives must be paramount, and that if, and when, those interests and the interests of the immigrant races should conflict, the former should prevail. (Great Britain Colonial Office, 1925 p. 10)

The government's concern for the interests of the Africans, however, did not translate directly into equitable action. From the outset, discriminatory policies were effected. Put into the context of education, Africans went to African schools, Asians to Asian schools and Europeans to European schools. The educational system reflected perfectly the

three tiered society that had evolved in Kenya, as described by Sheffield (1971 p. 9)

- 1) European farmers, civil servants and businessmen,
- 2) Asian shopkeepers and artisans, and
- 3) Africans working on farms owned by Europeans.

The "Asian Problem" in education was circumvented by policy decisions that affected the Africans as much as it did the Asians. In 1924 the colonial government enacted an educational program for Africans which was based largely on the findings of the Phelps-Stokes Reports on Education in Africa (cf. Lewis, 1962). The theoretical perspective on which the authors of the report based their assessment of the needs of Africans came directly from the ideas expressed by Booker T. Washington (1904) in his book Working with the Hands, which itself was the basis for "Negro" education in the United States.

Following Washington, the Report emphasized the importance of basic agricultural and manual training for the majority of Africans who, it was thought, "would remain on the land indefinitely as colonial subjects" (Berman, 1970 p. 121). The policy that followed from this report remained, for the most part, intact until just a few years prior to Kenya's independence from Britain in 1963. It stressed the use of the pertinent local language for purposes of education during the first four or five years of primary school. Education beyond this period was then to be conducted in English. Educators and researchers who informed this policy had decided upon this time frame

because they felt that the intellectual and emotional development of the African child would be retarded if, in the earliest years, the language of education was different from the language at home (cf. Binn's Report to the Nuffield Foundation, cited in Hunter, 1963). In addition, this policy was based on "practical" considerations. Most African teachers were not proficient enough in English to use it as an instructional medium.

The major reason, though, that the Education Department supported this system of education for Africans, was that it was firmly convinced that "education through industry is the only right system of education for the African in Kenya in his present state of development" (Great Britain Colonial Office, 1925 p. 5).

The relatively low status accorded to African education by the colonial administration was not allowed to continue unchecked. Two events, one internal the other external, jarred the administration enough to cause them to make some significant changes. The first was the Kikuyu Independent Schools Movement (cf. Indire, 1982). The Kikuyu had become dissatisfied with the "practical" educational curriculum offered in the mission schools. They demanded that they be allowed to establish schools independent of mission controls. In 1931, an ordinance was introduced that placed elementary schools under the control of district education boards that were allowed African representation. This was, perhaps, no more than a token measure on the government's

part. The schools were still overseen by colonial administrators.

World War II was the external event which heralded rather dramatic changes in the African educational system. Britain found itself in a vulnerable position. Germany had demanded the restoration of all former German colonies. Britain decided that in order to insure its position in and hold over its African territories, it had to enact policies which would facilitate the intergration of Africans into the British colonial structure. It became desirable to train Africans in the necessary skills which would enable them to hold positions as skilled workers and lower level administrators. Improving the education system for Africans was a required first step to meet this goal. Improving the education system for African students meant that more stress was placed on the attainment of literacy than had here-to-for been the case. As a consequence, more Africans were to be educated in English--but not many more--at least not at first. With these changes, an equation between literacy and language had been established. To be literate meant being literate in English.

The Problem of Language in Education and the Rise of English as the Medium of Instruction

The use of indigenous languages for early literacy training was maintained and promoted during the war years. But the increased need for more Africans proficient in the use of English, and those well indoctrinated with "English"

values, motivated the development of a more effective English based curriculum. Kenya, from the colonialist point of view, was to become a permanent and viable part of the British Empire.

While colonial educational policy supported the use of native language medium instruction in theory, the government in fact began to develop a system that would, in a relatively short period of time, encourage the elimination of indigenous languages in the educational arena. From the outset, there was never any discussion of an educational system which did not at some point introduce English as the medium of instruction. The only problem that had to be resolved was one of when it was to be introduced. The Colonial Office, over the years, issued a series of memoranda which extolled the virtues of early education through indigenous languages (The Place of Vernacular in Native Education, 1927; Memorandum on Language Usage in African School Education, 1943). However, during the time these memoranda were circulating, no concrete provisions were being made either to develop suitable literacy materials in the local languages or to train teachers to educate children through their own languages.

Even when the colonial government in 1950 did finally attempt to provide the necessary texts and teacher training for instruction in the "mother-tongue," they did so only within the structure of a very confusing educational policy that was doomed (or planned) to be short lived. In 1950 the

Report of the East African Literature Bureau stated that the first four years of African education would involve the use of locally spoken languages as instructional media for some geographical areas (p. 5). But in the areas where Giriama, Pokomo, Galla, Sagalla, Taveta, Suk, Kisii, Tende, Tesiot, Boran, Turkana, and Somali were spoken (i.e., the entire eastern portion of the country), it was stipulated that "Swahili should be used for literature while the vernacular continued as the medium of oral instruction" (p. 5).

Surely, problems were bound to arise from a system where children were taught in one language, required to read in another and then give all that up and begin again anew in yet another, namely English.

The situation this language policy created was not acceptable either to the Africans or to the colonial administration. The Africans were dissatisfied with a system that failed to educate their children, failing even in such a basic matter as fundamental literacy. The colonial government was not benefitting from its policy because the system was not able to produce the literate and skilled labor force it needed to insure that economic ties with Britain would be maintained after Kenya became an independent country.

The first serious effort to introduce English medium instruction from the first year of primary school began in April, 1957. The Ministry of Education established a 'Special Centre' in Nairobi to review the problems of

English medium instruction in non-European schools. A pilot project was developed and in 1958 it was tried out in several Asian schools. Although this project was hailed as a "revolutionary" approach, there were, according to T.P. Gorman (1968 p. 217),

a number of precedents for this development. In Ghana the question had been the subject of the Report on the Use of English in Gold Coast Schools which had been issued in 1956, in which it had been recommended that English should be permitted to be used as the medium throughout the Primary stage of education where teaching resources were available. More significantly in Kenya, the Aga Khan Education Board had decided in 1953 to use English as a medium in schools sponsored by it, and approximately thirty Standard 1 classes were in fact being taught in English by 1957.

Educationally, the new English medium instruction involved "the breaking down and reassembling of English structures within the limits of carefully selected word lists so as to meet the educational needs of young children" (O'Hagan, 1962 p. 102). The aim of the program was not to teach English, but rather to educate through the use of English. English fluency, according to O'Hagan (1962 pp. 102-103), a principal researcher on the project, "is a by-product of our system, not its chief end."

The experiment in Asian schools was a success by all accounts. O'Hagan (1962 pp. 102-103) noted that the children did not suffer any "psycho-somatic disturbances" and had in fact become "far more natural and far less inhibited" than they had been previously.

The Special Centre had in mind from the beginning of the English medium project to extend the course to the

African primary school system. It was, perhaps, administratively more efficient to begin its project in the Asian schools as the greater number of these schools were to be found in the immediate vicinity of Nairobi. The Peak Course (as the English medium course was called) for the Asian was modified slightly in content and made available as the New Peak Course to some African schools. By 1962, one year prior to Kenya's independence from Britain, the New Peak Course was extended to include "all 41 standards 1 in Nairobi and the 21 in Mombasa" (O'Hagan, 1962 p. 104).

Thus at independence, the Kenyan educational system had been carefully structured to include English medium instruction from Standard 1--in the two major urban centers anyway. Rural schools, which were under mission control for the most part, were left to continue as they had been. The role that English had assumed in education prior to independence was to be maintained. In 1964, the Education Commission (Kenya Education Commission Report, Part 1, 1964 p. 25) expressed their view this way:

As we studied our educational institutions, we were, of course, conscious of the English character of our inheritance. . . . We would think it churlish to gainsay the great benefits that we have gained from our English educational heritage. From the practical point of view, it is the starting point of our future planning.

In so far as language in education is concerned, the situation that developed in Kenya under the influence of colonialism and has continued throughout its independence is unique. It is generally the case in multilingual societies

such as Kenya's that the most widely spoken language (or languages) is used for promoting general education among the population. This is not the case in Kenya. As Table 2-1 below shows, English is spoken by less than one quarter of Kenya's population; and even then it is spoken in very restricted contexts such as in government and in school. Outside of these contexts other languages prevail.

Table 2-1. Percentages of Speakers for the Different Language Groups in Kenya.

23%	English and some other language
63%	Kiswahili and some other language
14%	Local African vernaculars only

Source: Wanyoike, 1982.

"If one considers what people go in for," observed Wanyoike (1982 p. 2), "Kiswahili seems to be the most popular language in Kenya." Yet, however popular Kiswahili may be as a language used in interpersonal communication, its popularity is not reflected by the language education policy in the country.

The linguistic profile of Kenya very accurately mirrors Kenya's social class structure. English, at the top of the pyramid, is the language of the educated elite. Kiswahili is used by the majority of the population as a common language for interpersonal expression. The sole use of

indigenous languages is representative of the non-literate, uneducated population.

This is not to say, however, that educated Kenyans do not use their own languages. Native language fluency plays an important role in establishing identity in particular ethnic networks. Kimeru, Gikuyu, and Luo, for example, are spoken by literate and educated members of those ethnic groups when in contact with other members of those groups, be they educated or not. The statement that the use of indigenous languages is representative of the non-educated, non-literate population in Kenya reflects the fact that the exclusive use of an indigenous by individual indicates that they are not likely to have acquired either of the two languages used for inter-ethnic communication.

Kiswahili vs. English in Education: Facts and Myths

It is clear that colonial educational policy intended English to predominate in Kenya's educational system. The subsequent independent government of Kenya did little to disturb the established order. The continued emphasis on English as the language of education, though, has not led to its being adopted as a lingua franca in Kenya. In actuality, Kiswahili, which has always been widely spoken throughout all of eastern Africa (typically as a second language), has assumed an increasingly greater position in the country's overall language use profile. Yet despite its

popularity, it has not received effective consideration as an instructional medium for promoting literacy.

Before the language of education debate had been resolved in favor of English, a large body of literature developed favoring the use of Kiswahili as the instructional medium. This literature, however, never had a chance to surface in light of the English medium bias that was evident in the colonial and immediate post-colonial education policies.

Any discussion that did develop from the idea of using Kiswahili as the medium of instruction for primary education was usually dismissed off-handedly. The arguments used as justification for dismissing the idea were both numerous and questionable.

One principal argument against developing a Kiswahili curriculum was that Kiswahili was said to be as foreign a language as English to all but a few coastal Kenyans. While this may be true linguistically, it is a fallacy when considered sociolinguistically. It is true that Kiswahili is not the mother-tongue of the vast majority of Kenyans. But it has been for many years a second language for very many Kenyans residing in all parts of the country. Kiswahili is historically THE lingua franca of East African and was the language used for inter-ethnic communication long before Europeans came to the region.

Another argument was built on the premise that because Kiswahili is a Bantu language those of Bantu origin would be

favored educationally. If this premise is acceptable, then English is a better choice because it is a more "equitable" language. It is true that Kiswahili is a Bantu language and so being shares close structural similarities to other Bantu languages in Kenya (e.g., Gikuyu, Embu, Meru, Teso, Kamba, and Kisii, and so on). It is also true that Bantu people make up a large percentage of Kenya's population. However, only a small percentage of people are ethnically Kiswahili. Professor Ali Mazrui (1967 p. 4) has observed that

Kenya has a narrow area of concentrated aesthetic achievement in Swahili--but elsewhere in the country it is the Swahili language as a neutral medium of communication, rather than the Swahili culture as a rich vessel of heritage which has spread.

The important fact that Kiswahili is an African language capable of expressing African sentiments and ideas has been conveniently dismissed in the debate.

Two more arguments against the use of Kiswahili as the medium for primary education were articulated by one of the people who was instrumental in developing English medium instruction from Standard 1, Charles O'Hagan. His comment was,

the young educated African, with his African language alone, would find it impossible to study abroad. On a national level an African country would find equal difficulty in taking a full part in international affairs. (1964 p. 203)

As regards O'Hagan's first point: it was not then the case nor is it now the case that Africans of any consequential number would find it possible to study abroad regardless of their knowledge of English. Any student well

educated in any language, including Kiswahili, and affluent enough to go abroad for education would find a way to do so. Any real hindrance to the "young educated African" wanting to study abroad would be one of insufficient educational background or insufficient funding and not language.

O'Hagan's second point is equally unfounded. Anyone with any knowledge of international affairs realizes that a country that is monolingually educated in languages other than English is not necessarily barred from international participation. All of these arguments are vacuous. Unfortunately they do have their dedicated followers.

The most serious and dangerous argument that was and is made against developing a Kiswahili medium curriculum is phrased in terms of the suitability of a language to function in an educational setting. This argument, differently phrased, is the "poverty of language" argument.

Writing in 1930, B.W. Broomfield expressed this view well saying,

many people . . . would [not] deny that any African language can be an adequate vehicle of scientific thought or philosophy of any of the higher branches of learning. But no one would claim that an African language, in the present stage of its development, is capable of such use. (p. 518)

Broomfield, nevertheless, supported the idea of promoting the use of Kiswahili in education recognizing that through the use of the language in an educational setting it would develop vocabulary and styles of expression and so would grow to meet the needs of the educational setting. This in

fact has been the case of Tanzania where Kiswahili is the language of education. This is true too in Kenya where the use of Kiswahili has attained widespread use in the mass media. In both of these instances, the language has evolved modes of expression reflecting modern thoughts and attitudes.

There is a strong infusion of western bias and paternalism inherent in the "language poverty" argument. The argument assumes that Kiswahili must be modified to the extent that it can be used to convey by direct translation the whole of modern philosophy and science before it can be deemed an appropriate language for primary and basic education in Kenya. This assumption, firstly, neglects to take into account the very nature and goal of primary school education. And secondly, it requires that more be expected of the Kenyan school child than is expected of any English speaking child in the west.

Finally, a related and often discussed argument against a Kiswahili primary school curriculum is that the quality of education that children receive would be compromised due to the lack of appropriate materials written in the language. Unfortunately, at present, this part of the argument is true. The instructional materials written in Kiswahili are inadequate for educational purposes, particularly at the primary school level (cf. Hyder, 1966; Wanyoike, 1982). Yet, this same argument is true for English, where in a wide range of subjects appropriate texts are unavailable.

The effects of the policy governing the language of education have extended far beyond the walls of the classroom. According to Hyder (1966 p. 8) it is apparent

that by having English as a medium of thought and Swahili as a medium of the masses, we are encouraging the development of class on the strict basis of the English-speaking intellectuals and the Swahili-speaking workers and peasants.

The trend of differential class development based on the knowledge and use of English has not abated, especially in the country's cosmopolitan urban capital of Nairobi. Recognizing the continuation of this trend, Professor Abdulaziz commented, "It will be a sad day when a section of our African population cannot express themselves except in a European language" (1974 p. 8).

Attributing this language based social rift to English is only partly accurate. The English speaking-Kiswahili speaking social dichotomy is encouraged primarily through an educational policy which promotes English as a literate medium over Kiswahili or other indigenous languages. Literacy, as a social political and economic phenomenon, historically is seen to serve a gate-keeping role--one that keeps the keys to the gates in the hands of the literate elite (Ong, 1971).

The outcome of the debate over language in education is that literacy is identified with English while indigenous languages maintain their traditional roles as languages useful only within the bounds of oral communication.

The Teachers' and Students' Dilemma

While the need for an English based rather than a Kiswahili (or mother-tongue) based curriculum may be questioned, the fact that there is a continued and persistent demand for such a curriculum remains. Primary school teachers, in order to meet the demands of beginning education in English as early as possible, are faced with an onerous and perplexing task. In the densely populated urban areas especially, "the classroom becomes a little 'Babel' in the art of 'speaking in tongues'" (Wanyoike, 1982 p. 9). The children come to the classroom with a scant knowledge of any other language than their own mother-tongue and are required to begin learning in English as well as learning Kiswahili--which is taught as a subject from Standard 1 in most urban schools. Both the teacher and student, but especially the teacher, must be well prepared linguistically to handle the situation. What occurs frequently in the classroom is instruction in a mixture of languages. The following anecdote (found in Wanyoike, 1982 p. 10) is a typical one.

Teacher: "Seven times four is how much?"
 (silence)
Teacher: (in Kiswahili) "Saba mara nne ni ngapi?"
 (silence)
Teacher: (in Kikuyu, to a pupil who happened to share the language with the teacher) "Wambui, nduui mugwanfa maita mana ni ciigana?" [Wambui, don't you know what seven times four is?]
Wambui: (in Kiswahili) "Ishirini na nane."
 [twenty-eight]

The above situation is hardly avoidable given the present school curriculum and the training of primary school

teachers. English is a compulsory "pass" subject for all certified teachers. The candidates who qualify for certification are qualified to teach English (and in English) although they are not specialized English teachers (British Council, English language and literature division, 1979). Most teachers have learned English in much the same way as they teach it--from a textbook. Their command of the language is usually good although as an instructional medium it is severely limited and is truly "textbook formal." Teachers may not always have the flexibility of vocabulary or of grammatical structures that would allow them to present expanded discourses in the subjects they are teaching so that they may reach students in their classes who have varying degrees of knowledge of English.

There are few teachers trained to teach (in) Kiswahili. Those who are trained teach Kiswahili as a subject usually in the upper primary grades. But unlike the teachers' knowledge of English, their knowledge of Kiswahili is likely to be informal and quite natural. Teachers will very often use Kiswahili to explain lessons which their limited knowledge of English (relatively speaking) does not permit. It is very startling to observe this in the classroom. The students respond eagerly when they suddenly come to understand the content of the lesson which had been obscure and burdensome when presented in English.

Conclusions and Additional Observations

English has been the language of literate education from the time education was introduced by the first European missionaries and, despite much debate, it remains the language of literate education today. From the earliest stages of the development of the Kenyan education system, Kiswahili was the one indigenous language that could have been promoted as the language of education as there was already an existing, though small, body of written literature in the language. Most importantly, it was at least familiar to a large number of people throughout the country as an oral medium of communication.

Yet, only recently has educational policy come to favorably support the widespread teaching of Kiswahili in the primary schools. As of January, 1985, Kiswahili has become a compulsory exam subject for all students wishing to obtain their Primary School Certificate. The government's decision to examine students' (literate) proficiency in the language is a positive step and will no doubt elevate the status of Kiswahili in the primary school curriculum and create an impetus for developing more and better quality language materials. It is not at present, however, used as the medium of instruction to any significant degree at any grade level. Consequently, literacy in Kiswahili is not being promoted throughout the curriculum.

The language situation in the schools reflects, in many ways, the language situation in the country at large (and

has probably assisted greatly in creating the situation). English is dominant as a medium of writing for both creative and practical purposes (see British Council, English language and literature division, 1979). Most novels and plays are written in English, since publishers are reluctant to print books in any other language. On the practical level, Kenyans use English for formal business and government correspondence although they typically discuss these matters in their own language (when it is shared) or in Kiswahili.

As a corollary, English predominates in the reading habits of most Kenyans. The average circulation of the two daily English newspapers is almost three times that of the Kiswahili daily paper Taifa Leo (123,000 English papers vs. 43,000 in Kiswahili on average) (British Council, English language and literature division, 1979). English is definitely the language of literacy for the overwhelming majority of Kenyans.

The language situation, however, in no way reflects the patterns of language use in oral communication. Kiswahili is widely used in both radio and local television programming. Additionally, it is the most frequently used language for personal interaction in the highly populated urban areas of the country. Kiswahili, moreover, is the language that most people throughout the country learn and use as a second language. It is the dominant indigenous language that unites all Kenyans.

The attitudes towards these respective languages is clear from the contexts in which they are used. English, which is used most in non-African contexts, is a foreign language--Kiswahili is not.

Kenyan children have, socially and educationally, very diverse linguistic needs. First, they have the need to communicate with their family members in whatever the language is that is used in the home. Second, in order to participate fully in Kenyan society, they must have a good oral command of Kiswahili. Third, they must become literate in English in order to be successful in school. The last two of these needs are being addressed by the current educational system.

CHAPTER III

ASSESSMENT MEASURES FOR ENGLISH AND KISWAHILI

The language situation in Kenya offers a unique opportunity to study the acquisition of both English and Kiswahili. English is the language through which literacy is attained, but it is not the language used in normal daily interactions among people, nor it is native to the overwhelming majority of Kenyans. In contrast, Kiswahili is commonly used by many Kenyans in day-to-day interactions, especially in highly urbanized areas like Nairobi and Mombasa. It is the native language of many people living in Mombasa. It is a second language for most people in Nairobi and is learned both within the context of schooling as well as outside of it.

Most Kenyan children entering school have had little or no experience with spoken English. They have no orally acquired English competence to bring to the reading experience introduced at school in Standard 1. They may or may not have such competence in Kiswahili. Many in the Mombasa area do, but for children in Nairobi, knowledge of this language may be limited initially to a few commonly used words and phrases. Many children, then, have no language background that corresponds to the language curricula of

primary school. A primary school teacher in Nairobi explained the situation to me in the following way:

Because of the environment [in Nairobi] our children have grown to know very many languages early but not well. A Luhia boy in the city knows Luhia not well, Kiswahili not well, and English not well.

Both English and Kiswahili use the same alphabetic system for writing. Students are taught to recognize and reproduce the letters of the alphabet and to name them. Those students who have been to pre-primary school (as in the case with many students in Nairobi and Mombasa) have already learned the alphabet, a small sight vocabulary in English, and how to write their names by the time they enter Standard 1.

Upon entering primary school, students begin learning to read right away from English primers. They also are expected to read instructions in other texts and to take tests written in English. Although oral teaching is done in English, in the course of a school day, students, in general, are exposed to at least as much of the language in its written as its spoken form.

Students are introduced to written Kiswahili less hastily. Kiswahili is taught only as a subject (one lesson per day) and is generally viewed by the teachers as a language for oral expression. The beginning Kiswahili texts, such as those in the Msingi wa Kiswahili series, are designed primarily for initial oral instruction. They contain many interesting, colorful and well drawn pictures

around which teachers can build lessons promoting the use of expressive, fluent, and grammatically correct spoken Kiswahili. Reading in Kiswahili is introduced only after much oral instruction and then it is developed from what the children have first learned orally. Generally speaking, Kenyan school children come to learn English by "eye" and Kiswahili by "ear."

In order to evaluate the linguistic abilities that arise from the process of education and relate these abilities to academic success, it was necessary to develop a number of quantificational measures. These measures were selected to evaluate the acquisition of English, the acquisition of Kiswahili, and the academic achievement of students both from the perspective of general linguistic and cognitive development and from the more specific expectations of the Kenyan educational system.

The Kenya Language Syllabi for English and Kiswahili

The Kenyan Ministry of Education has developed educational syllabi which outline the objectives, content and teaching methods for subjects taught at the primary school level. These syllabi are intended to provide not only a set of guidelines for the teachers to follow but also the basis for evaluating students' academic achievement at each grade level. The text books for subject areas are chosen, in part, because they meet the requirements stipulated in the syllabi and closely follow proposed instructional sequences.

Samples from the English Syllabus (Kenya Ministry of Education, 1978) and the Kiswahili Syllabus (Kenya Ministry of Education, 1975) for primary schools grades are given in Appendix A.

English Syllabus

The objectives of the English curriculum (Kenya Ministry of Education, 1978 p. 1)

. . . may be summed up by stating that all children should acquire a sufficient command of English in spoken and written form, to enable them to communicate freely, follow subject courses and textbooks, and read for pleasure in the language.

The syllabus is designed to meet the needs of students who will terminate their formal education upon leaving primary school (Standard 8) as well as those of students who will be entering Secondary School. The needs include

(a) pronunciation of international intelligibility, (b) a good ear for the language, (c) working command in the necessary skills of words and phrases (including idioms) of general serviceability, and (d) working command in the necessary skills of grammatical items (often referred to as "Sentence Patterns") of general serviceability. (Kenya Ministry of Education, 1978 p. 1-2)

The English syllabus covers all of the language skills students must learn from Standard 1 to the end of the primary school. It provides an itemized summary of the English content that is to be introduced at each grade level.

For each grade level, the syllabus gives detailed lists of words, phrases and sentence patterns. The word lists for grades one to three are divided between those words which

are to be introduced orally and those which are to be introduced as reading items. After grade three, all words are expected to be spoken as well as written and read. In addition, children are expected to understand some words that they do not have to learn to say. For example, answer, ask, know, question and letter are words that first grade students are not expected to say but are expected to understand when heard. All of the words on the reading lists are on the word lists to be learned orally. If the recommendations of the English primary school syllabus are attained, a student will have learned an oral vocabulary of approximately 1,800 words and a sight reading vocabulary of about 700 words by the completion of the third grade. The spoken vocabulary of the Kenyan school child at age 9 is comparable to a 5-year-old child acquiring English natively in terms of the number of individual vocabulary items (cf. Lenneberg, 1967; McCarthy, 1954; Slobin, 1967; M.E. Smith, 1926, 1941).

The listing of sentence patterns in the syllabus is extensive. It contains a total of 264 sentence patterns to be learned by the end of Standard 7. The patterns are presented in an explicit way and give general structural descriptions accompanied by one or more example sentences. Many of the patterns which are introduced at the early grades are repeated and expanded upon at later grades. The patterns introduced in Standard 1 consist mainly of simple sentences. Heavy emphasis is placed on the use of demonstratives, determiners, regular verb tenses, verb phrase

negation, question formation (including 'yes/no' questions with 'do' support), and pronominal usage both referential and possessive. These patterns are extended in Standard 2 with the addition of noun and verb phrase modifiers and complementation, reflexive pronoun structures and modal auxiliary forms in declarative and interrogative sentences. Various complex conjunctive forms are introduced in Standard 3 (e.g., although, since, while) as are relative clauses and truncated passive constructions (i.e. agentless passives). Conditional clauses are also introduced at this level. The patterns introduced in Standard 4 are refinements of those presented during the earlier grades. Comparative and superlative structures using 'more' and 'most' are introduced here as is the comparative adjective structure (i.e., -er + than). Most of the complex sentence forms in English are introduced by Standard 5. From this grade onward, much time is devoted to these structures, to writing skills (spelling as well as punctuation) and semantic refinement in vocabulary usage.

If a student is able to learn well the vocabulary and structures contained in the syllabus, he will have learned the minimum English skills necessary to read and follow his textbooks, provided they are written according to the syllabus outline. He will also be able to understand classroom instruction so long as the teacher does not assume a greater or different competency in English than what has

been presented in the syllabus. These provisions, however, seldom obtain either in the curriculum or in the classroom.

The textbooks used in the school curriculum do not always reflect the language skills recommended by the syllabus, especially in the earlier grades. The texts used in Standard 1, for example, often presuppose at least a Standard 3 knowledge of English. For example, the instructions for an exercise on capitalization for Standard 1 students in a widely used English program series entitled Better English (Ridout, 1961) are as follows: "Every sentence begins with a capital letter. Choose the right word from the brackets, and then write out each sentence." With the exception of the words 'the' and 'write', none of the vocabulary is found among the list of reading words contained in the syllabus for Standard 1. Most of the words are not introduced until Standard 2 and the sentence patterns are not presented until Standard 3.

Students are expected to be able to work independently from their textbooks at Standard 1. Exercises from the textbooks are assigned either as deskwork or as homework. Students who do not understand enough English to understand the instructions to the exercises frequently just copy everything that is written. Sometimes, they will construct their own instructions for doing their exercises--best guessing as it were--based on what the exercise looks like. Most students, for instance, know that a sentence with a blank space gets filled in with something or that a sentence

followed by several numbered choices requires choosing one among the several.

More important, however, is the mismatch between the levels of English competence prescribed by the syllabus and the levels of English presented in the textbooks. While the syllabus outline for Standard 1 contains vocabulary and structures useful for identifying, talking and reading about things that occur in the classroom or in the child's environment (which in this context is restricted to a simple view of the home or school) it is not particularly useful for learning the content of the curriculum. The Standard 1 curriculum includes English, Swahili, math, religion, and science. The complexities of the subject matter are not well served by the syllabus.

The teachers, in attempting to follow conscientiously the syllabus, try to employ the language prescribed in it as much as possible in their teaching. The result is illustrated in the following transcription of a Standard 1 maths lesson on simple fractions.

Teacher: Look at the two pieces of chalk I am holding. They are the same. (She puts down one piece and holds the other up to view) I want to cut this piece of chalk so that I have some to use now and some to use later. I want to have two pieces. I will measure the chalk and look for the half. (She runs her finger up the chalk half way and holds it in the middle and then breaks the chalk in two.) Now, I have got two pieces from one. I have two pieces. What do you call these two pieces?

In this example, while the level of grammar used was more complex than is expected of a Standard 1 student,

appropriate grade level vocabulary was used. But, vocabulary alone did not serve to convey the message. The answer the children gave to the teacher's question "What do you call these two pieces?" was, without exception, "same." The meaning the students derived from the teacher's lesson was given by the second sentence ("They are the same.")--a structure that is taught overtly throughout Standard 1.

By observing the language used in the classroom and that presented in written form in textbooks, it is possible to reach the general conclusion that the levels of English language proficiency planned for by the syllabus are not in fact valid ones with respect to the language requirements placed on students by the primary school curriculum and by classroom instruction. It appears that the language skills outlined in the syllabus become useful to the educational context (and to learning) only after Standard 3. It is at this point that both the vocabulary and structures presented are sufficient to the task of education.

The Kiswahili Syllabus

The Kiswahili syllabus for the primary school grades was developed to meet five primary objectives.

- (a) To develop ability to understand and converse in Kiswahili to the point where the pupils can use the language competently.
- (b) To develop the pupils' ability to read in Kiswahili.
- (c) To develop the pupils' interest in learning one language.

- (d) To teach the art of writing good, clear Kiswahili in order to enable the pupils to communicate effectively in writing through this medium.
- (e) To arouse the pupils' awareness in their national language and hence make them keen to foster their national identity through the language. (Kenya Ministry of Education, 1975 p. v).

Whereas the objectives of the English syllabus relate specifically to educational goals, those formulated for the Kiswahili syllabus primarily meet social and individual goals. The syllabus is designed for students entering school who have no knowledge of Kiswahili. Throughout the syllabus, an oral command of the language is stressed. The syllabus suggests ways to enhance students' oral proficiency (e.g., story telling, singing, learning rhymes, building descriptive skills, etc.) and this proficiency is to be augmented through reading and writing in the language. The syllabus suggests that the Masomo ya Kiswahili (Kenya Institute of Education, 1971) series be used beginning in Standard 3. Prior to this grade, no specific texts are recommended (nor are they necessary) and teachers are encouraged to develop their own teaching materials.

The suggested approach for introducing Kiswahili to Standard 1 students is to teach the language through stories, games and activities. In this way the students are able to begin to learn a few words and simple phrases in an environment that is entertaining and enjoyable. By the end of Standard 1, students are expected to know a small

vocabulary describing familiar actions and things and to sight read a few words and simple sentences.

The students' oral fluency in the language is developed further during their second year in school. The teacher is to encourage students to express themselves verbally in the language. During this year, students are required to develop more skill in reading. It is at this time that phonic analysis of words is introduced.

The aim of the first two years of Kiswahili instruction is to build the student's confidence in using the language expressively and not to dwell on the details (i.e., grammar) of the language. Further, the first two years of training are intended to build the foundation for more explicit and systematic instruction of Kiswahili.

Beginning with Standard 3, the syllabus prescribes an instructional sequence to be used for teaching Kiswahili grammar. Sentence structures are outlined (by example) along with the word structures that are to be used in the sentences. Sentence structures in Standard 3 should make use of the five most frequently occurring noun classes: Ki-Vi, M-Wa, N-N, Ji-Ma, and M-Mi. Using these five noun classes students are taught subject concord in verb phrases, class markers on demonstratives (e.g., hiki, huyu, hii, haya, etc.) and prepositional (locative) forms (e.g., kitabu kiko mezani). Negative subject prefixes are reviewed as are all of the verb tenses used in simple affirmative sentences and the use of the infinitive ku tense in verbal sequences

(e.g., 'anapenda kusoma'). Oral reading becomes an important part of the lessons during this grade and continues to be important throughout the primary grades.

All of the noun classes, including the locative noun classes, are included in the syllabus for Standard 4. The use of noun class concords in both subject and object positions are introduced in the lessons. Among the structures taught at this grade level are relatives (both infixed and -amba type relatives), passive verb forms (i.e., verb forms with the -w affix) and sentential passives (e.g., 'kitabu kiliandikwa na mvulana' 'the book was written by the boy'); prepositional forms (i.e., chini ya 'under', mbele ya 'behind', juu ya 'over', karibu na 'near') are reviewed as are adjectives of quantification.

Using Kiswahili as a means of written expression begins to take on more importance by Standard 5. Correct grammatical usage of standard (i.e. written) Kiswahili is stressed heavily. Students are to be given a lot of practice in grammar in the form of written exercises and are encouraged to begin to compose essays and letters.

The last three years of primary school (Standards 5-8) are devoted to refining the student's command of the finer points of grammar and to developing reading and writing skills. Students are expected to display their command of the language by composing speeches and delivering those speeches orally and by writing and performing poetry and plays.

The goals and objectives of the Kiswahili syllabus seem to be well served for the most part by the educational curriculum. Students spend one class period a day (about 40 minutes) learning the language explicitly and using it creatively. Unlike English, students are not expected to learn Kiswahili and learn in Kiswahili at the same time. Their success in school does not hinge upon their knowledge of the language. Consequently, they are less pressured to perform at unexpectedly high levels in the language and appear to enjoy their Kiswahili lessons.

Teachers also seem to enjoy the Kiswahili lessons. They tend to be more relaxed with their students. They take a great deal of pleasure in listening to the students read aloud, tell stories and act out plays.

The texts used in the schools for teaching Kiswahili closely follow the recommendations made in the syllabus for the most part. The Masomo ya Kiswahili (Michuki, 1967) follows the syllabus closely and is very useful in classrooms where the students' familiarity with Kiswahili is limited. Another series, Hatua za Kiswahili (Zani and Zani, 1985) follows the syllabus in principle (it is structured to develop oral abilities prior to reading or writing abilities, for example) but it introduces grammar explicitly in the second book, though grammar does not comprise the majority of the book's content. The latter series is most useful in areas where most of the school children are fairly fluent in Kiswahili (e.g. the country's coastal regions).

The objectives of the Kiswahili syllabus and the time frame for achieving those objectives (eight years of primary school) are valid with respect to the role of Kiswahili in the current system of education. The educational needs of the students are well met by the Kiswahili syllabus. Most students completing primary school will have a sufficient command of the language to be able to express themselves well enough to be understood in a number of situations. They are also prepared to read popular literature and newspapers for pleasure and information. They will, in general, be able to participate in any activity where Kiswahili is spoken, such as religious services, local government, social get-togethers with people of different African language backgrounds, and cultural events.

City Council Examinations

At the end of every academic school year, Kenyan students are required to take an externally administered examination in all of their subject areas. This examination is one of the most important measures of a students' academic achievement. Although an individual student's scores on the exam do not in and of themselves determine passing on to the next grade (NB: there is a tendency in Kenya, as in the United States, to pass students to keep them with their age mates and to hope they will catch on at some point), the exam is taken very seriously by students, teachers and school administrators. The scores reflect not

only how well or poorly students are doing in their subjects but the quality of the school and of the instruction they have received as well.

The format of the examinations varies within and between subject areas. Individual exams may use several different answer formats including multiple-choice, true-false, fill-ins, sentence completions, list, same-different distinctions, word construction, picture matching, and object identification. With the exception of the Kiswahili exam, all of the examinations are written in English.

In general, these examinations are designed to look for specific knowledge (even of whole texts sometimes) rather than general knowledge and understanding. For example, one question on a district exam given to students in some Nairobi schools was: Rover is a _____ name. In order to answer the question, the student must have read and remembered that the dog in the primer Kitty and Rover was named Rover.

The exams cover the entire required primary school curriculum and include the following areas: English, Kiswahili, math, religion and science. History is included in the course curriculum at Standard 3 and is tested at this level and above.

The language exams (both English and Kiswahili) contain sentence completion, word completion, vocabulary identification and word transformation tasks (e.g., singular to plural

or present to past tense). A reading comprehension component (a passage followed by questions) is added to the Kiswahili exam at Standard 3 and to the English exam at Standard 4. Students in Standard 7 are expected to write a composition in English.

The exams in other subject areas are essentially tests of specific facts but some skills are included (e.g., map reading, analysis of science experiments, etc.).

The content of the exams reflect quite accurately what is taught in the classroom. Teachers are aware of the types of questions that are frequently asked and are sometimes criticized of "teaching to the exam." The exams, though, contain information and skills that are not prescribed by the syllabus. A sampling of the examinations for each standard is included in Appendix B. It is notable that students' academic performance is assessed in ways that presuppose much higher level language abilities, specifically reading abilities, than those planned for by the syllabus. This is most apparent in the exams written for the lower primary grades (Standards 1-4).

For example, a very simple analysis of the Science exam for Standard 1 shows that out of 30 nouns on the test, fewer than one-third appear on the noun list in the syllabus and only two of those are introduced as reading items at this level. Similarly, only 8 of the 20 verbs on the test appear in the syllabus and of those only three are reading words. The English syllabus is not an accurate indicator of

the levels of the language students are exposed to in their classes. The City Council Examinations are better indicators, since they are written to test for specific information conveyed through the content curriculum.

The language syllabi and the City Council Examinations are good but general indicators of the levels of language competency expected of primary school students. The syllabi indicate only the levels of language to be covered in language classes. The City Council Examinations indicate the levels of language used in covering the required content curriculum. They are, however, in and of themselves not descriptive of the linguistic competencies of primary school students. For this, more precise measures are needed.

Formal Language Acquisition Measures for English and Kiswahili

The preceding section established the goals and methods for language instruction in Kenyan primary schools. In summary, the goal of English instruction is to enable the citizenry of the country to participate in the international community of English using commerce, negotiations, and the arts. The goal of Kiswahili instruction, on the other hand, is to foster a national unity and identity. Both goals are promoted through standardized syllabi and curricula specific to grade levels as well as to select linguistic skills and components. Attainment of various stages in the acquisition of linguistic skills in the two languages is regularly determined through externally administered examinations.

The language policies and methodologies of the Kenyan primary school system appear to be well motivated and expertly constructed. Yet, there are a number of indications that suggest that these policies and methods are not working effectively to promote a general primary education throughout the country.

Both the number of students repeating grades at the upper primary levels and dropping-out of school are high in Kenya (cf. Republic of Kenya, 1983 p. 150). Although recent statistics which reveal the magnitude of the drop-out rate for primary school students are not presently available, earlier statistics suggest that the rate in 1970 neared 70 percent (see Indire, 1982). Having a high rate of students failing academically constitutes a significant drain on the country's educational and economic resources.

The Kenyan government, in response to this problem, enacted a plan in 1985 which extended the number of years of primary education from seven to eight. In addition, the government has stressed the need for including more technical subjects (physical science, agriculture, manufacturing skills, etc.) in the primary school curriculum in addition to academic subjects. The government continues to take positive steps to make primary education more relevant both to the needs of students whose formal education terminates at the end of primary school and to the needs of the country.

The goal of the present research was to determine the extent to which the system's lack of success could be accounted for by linguistic factors (i.e. knowledge of English, native language acquisition and literacy). To accomplish this research objective, it was necessary to establish, more precisely and rigorously than available test scores did, the levels of skills in both English and Kiswahili attained by a representative sample of primary school students. With these data in hand, specific questions could then be asked concerning the relationships between language skills and various educational, cultural, and linguistic factors which might play some role in academic achievement.

The first step, then, was to construct and administer tests which assess students' linguistic knowledge in the two languages. These tests are described in the following sections. The tests are reproduced in full in Appendix C.

Measuring Language Abilities in English

The Test of Syntactic Abilities (TSA) (Quigley et al., 1978) tests nine of the major syntactic structures of standard English: negation, conjunction, determiners, question formation, verb processes, pronominalization, relativization, complementation, and nominalization. Although this list of structures does not represent the entire syntactic repertoire of standard English, it does represent structures which are important for good

comprehension and production of written standard English.

As Quigley et al. (1978 p. 2) point out

Given a good command of these structures a student can be expected to learn to read and write well; without such command, he cannot be expected to learn to read and write even adequately.

The TSA examines students' literate knowledge of English. It is a test of language structure as well as a test of literacy.

The test uses a multiple choice format based on four alternatives. There is one grammatically or semantically correct choice (depending on the component being tested by an item) and three incorrect alternatives. The three incorrect choices are not merely "wrong." Rather, they are designed to indicate the types of comprehension or recognition strategies the test taker may be using to deal with particular linguistic structures. Many of the "wrong" choices are constructed on the basis of errors young children make in sentence construction and comprehension. Others are errors that have been frequently observed in the written language of deaf students, a group whose knowledge of English is limited by the fact that they acquire it only through seeing it and not hearing it. In other words, the errors are possible errors constructed from observing the types of psycholinguistic rules or strategies children, impaired language users and literate adults use in processing linguistic data. None of the choices is impossible in the sense that it cannot be accounted for in any linguistically or psychologically valid way. For instance, there

is neither a known language strategy which would predict nor linguistic rule which could account for the possibility of 'In not the were shoes box the' as being a possible error form of the sentence 'The shoes were not in the box'. But, an error like 'Not the shoes were in the box' can be predicted by a strategy that says 'put the negative element before S'.

Herein lies the value of this test. Each of the choices on any item yields information. From an analysis of students' performances it is possible to assess their linguistic knowledge developmentally and determine whether their development is proceeding normally or deviantly. In the former case, one would expect to find more errors of the type made by normal but less advanced children. In the event of the latter, one would observe more errors in the direction of those made by children who are not progressing normally (e.g., hearing impaired children). The TSA, therefore, has the potential for discriminating between individuals who are matured linguistically and those who are progressing through developmental stages. Moreover, it can discriminate between individuals who show deviations in normal language processing and those who do not.

The TSA includes both a Screening Test and a Diagnostic Battery. The Screening Test contains several items for each of the aforementioned nine syntactic categories in English. It was designed to provide a profile of an individuals' syntactic knowledge in a relatively quick way. The

Diagnostic Battery consists of 20 individual tests and assesses in detail each of the nine categories. Only the Screening Test was used in this study.

The Screening Test was modified to some extent to accommodate the cultural differences between an American and a Kenyan population of school children. Essentially, all that was involved in the modification was the substitution of words that may not be familiar to Kenyan school children (e.g. 'pet store') and some adjustment in phrasing to suit cultural norms and attitudes.

This modified version of the Screening Test contained 110 items. There were 52 items testing recognition of structures and 58 items testing structural comprehension.

The items which test recognition contain one grammatically correct choice and three ungrammatical alternatives. To make a correct choice, a student needs only to recognize and make the correct form of a sentence. For example,

- A. Who the boy found the book?
- B. Who found the book?
- C. Who he found the book?
- D. Found who the book?

In order to make the correct choice on the comprehension items, a student must understand the meaning of the target sentence or sentences. There are three different types of comprehension items requiring students to (1) choose the sentence which is consistent in meaning with the target sentence, (2) choose the sentence that best conveys the meaning of two stimulus sentences (i.e., choosing a correct conjoined or relative paraphrase of

two separate sentences), and (3) select a word or phrase that best fills in the blank of a stimulus sentence. The lexical and semantic content of the stimulus sentences is controlled. This insures that correct choices are made only through comprehending the syntactic structure of the sentence. The following is an example of a comprehension item of the first type:

Juma thanked the teacher and went home.

- A. Juma went home.
- B. The teacher went home.
- C. The teacher thanked Juma.
- D. Juma and the teacher went home.

The second type of comprehension task requires that a grammatically correct paraphrase be made of two stimulus sentences as in the example below which tests conjunction.

Father opened the door. Mother saw a man.

- A. Father opened the door Mother saw a man.
- B. Father opened the door and saw a man.
- C. Father opened the door and Mother saw a man.
- D. Father opened the door and a man.

The third type of comprehension task, filling in the blank with a grammatically correct item, is illustrated by the following example.

You thanked the teachers _____ helped Mary.

- A. who
- B. when
- C. what
- D. where

Quigley and his colleagues administered the 20 individual tests of the Diagnostic Battery to 237 normal hearing children (1978 pp. 100-104) between the ages of 8 and 13.

Each of the tests in the Diagnostic Battery was shown to discriminate well within this age range.

Seven of the 20 tests in the Diagnostic Battery were administered to the older students ages 14-16. These seven tests represented the most difficult tests in the Diagnostic Battery (i.e., the tests for Passive Voice, Relativization Comprehension, Relative Pronouns and Adverbs, Embedding, That-complements, Infinitives and Gerunds, and Nominalization). It was assumed before testing that students in this age range would find the other tests too easy and not yield meaningful results. This assumption was borne out. Even on the seven most difficult tests students in the 14-16 age range scored above 74% (the designated cut-off score) on most of the tests.

When the normative data from the TSA are compared with the data amassed from the now 'classical' child language acquisition studies (see for example, Berko, 1958; Bloom, 1970; Brown, 1973; Cazden, 1968; Chomsky, 1969; Klima and Bellugi-Klima, 1966; McNeil, 1970; Menyuk, 1963, 1964; among others) some interesting observations can be made.

The data from these language acquisition studies indicate that most English syntactic structures are acquired by children learning English natively by the age of 10. Basic phrase structure rules are said to be acquired by age 7 and the simpler structures in English, negation, conjunction, and simple non-embedded or non-inverted questions by age 8. The results from the TSA tend to confirm

many of these findings. The test scores indicate that by the age of 8 normal children with average IQs (between 90-110) have acquired the following structures: negation, Wh-words, and yes/no questions. Further, the TSA test data support the claim that children by the age of 10 have acquired the knowledge of English which will predict the correct use of simple conjunction, determiners, verb processes (i.e., verb sequences, and main, linking and auxiliary verbal constructions), and possessive adjectives and pronouns.

However, the data from the TSA show that students' ability to deal with a number of complex structures continues to develop until well into the early and mid-teenage years. Results show a large and significant improvement in performance between the 12-13 and 14-16 age categories on the seven most difficult tests in the Diagnostic Battery. The test results reveal that there is a large and significant increase in percent correct scores between the 12-13 and 14-16 age categories on the seven most difficult tests in the Diagnostic Battery.

Measuring Language Abilities in Kiswahili

The indigenous multi-lingual situation found in Kenya which stands in contrast to the foreign uni-lingual circumstances of its educational system makes possible a rich research design that can incorporate comparable measures of language acquisition in different languages.

The situation in Kenya avails itself to research comparing first and second language acquisition in a population who are still within the age range associated with the critical period for language acquisition. In addition, the situation allows for the comparison of languages acquired in markedly different social situations and through different perceptual and cognitive domains.

When comparing first language to second language acquisition, it is desirable to use methods and measures that are comparable for both languages in question, here Kiswahili and English. The measurement used for comparison in this study is the TSA.

This author, with assistance from her dissertation chairman, as well as several Kiswahili teachers in Kenya, developed a test of syntactic abilities for Kiswahili based on the TSA. Since there is no empirical information as to what types of structures are produced by individuals acquiring Kiswahili either normally or deviantly, every attempt was made to construct each of the error alternatives according to types of errors observed in children acquiring English. That is, we tried to construct a body of possible structural errors given what we know about the kinds of strategies children use in producing and comprehending English and the types of structures typifying certain acquisitional stages. These error types include word order errors, mistakes in agreement, certain morphological

omissions and additions, and repetitions of certain grammatical morphemes.

Kiswahili exhibits all of the syntactic categories that are investigated by the TSA, although the formal representation of these categories may be different from what they are in English. In Kiswahili, many grammatical functions are prefixed onto verb stems rather than being suffixed to verbs or freely occurring as they are in English. Plurality and verb tense, for example, are marked on the verb in the following way.

Wanamke wa - li - andika barua.

Women PL - TNS - write letters
CONC PAST

'The women wrote letters.'

Relative constructions can be indicated either on the verb (infixing with a noun class concord marker plus the relative marker o between the tense marker and the verb stem) or lexically by 'amba-' plus a noun class marker. This is not identical to but is very similar to lexical relatives in English.

The Kiswahili test, hereafter referred to as the TSA-S, uses the same multiple choice format as the TSA in English (TSA-E). The TSA-S, like the TSA-E, also has both recognition and comprehension items. The total number of items on the test is 104.

CHAPTER IV

TEST ADMINISTRATION, ANALYSIS AND RESULTS

The TSA-E and TSA-S, as described in the previous chapter, were devised as reading tests which measure language. However, unlike many conventional tests of reading which measure, often in an undifferentiated way, a number of abilities and skills (e.g., the ability to draw inferences, the ability to define words in context, the ability to distinguish between specific and general information, etc.), the TSA-E and TSA-S were designed specifically to assess the recognition and understanding of specific syntactic structures used in the comprehension of English and Kiswahili. The structures on the TSA-E are those which are used frequently in standard (written) English. Those included on the TSA-S conform to accepted descriptions of Kiswahili (cf. Ashton, 1947; Loogman, 1965; Polome, 1967; Wilson, 1970) and correspond to those included on the TSA-E. The ability to comprehend these structures is hypothesized to be an important factor in academic achievement, since such achievement is largely dependent upon the ability to access information from written sources and convey information through writing.

The tests not only measure reading (defined narrowly here to include only comprehension and recognition of

English and/or Kiswahili syntactic structures) but a range of linguistic and non-linguistic knowledge as well. During the act of reading, some readers will alter written syntax to conform to their internal auditory representation of language (see for example, Vogel, 1975). This is true especially of young and less skilled readers. Many of the "wrong" choices on the tests were constructed from reading errors which occur from altering written forms to correspond to aural representations. The tests have the capacity to measure both what students know about language from seeing it as well as what they know from hearing it. In other words, the tests assess literacy attainment as much as linguistic knowledge. Much more will be said about language and literacy in following chapters.

The purpose of the various analyses of the test results in this chapter is to give some general indication of the levels of performance evidenced by the population of students which was tested. Throughout this chapter, the results are reported in terms of percentages of correct responses to the various structures and/or groups of structures on the tests. The principal aim of the analyses is to determine whether or not groups of students can be differentially identified by these tests. If so, then it will be possible to see whether certain groups who perform differently on these language measures also perform differently academically.

Administration

The TSA-E and TSA-S were administered to classes of students in their regular classroom during normal school hours. The classrooms are fairly typical Kenyan urban school classrooms. They are airy and comfortable but small and appear crowded. The classroom walls, in general, are not adorned with maps and pictures. School furniture is expensive and is limited. Consequently, students sometimes have to accommodate an extra person at their desks.

The time of day of test administration varied somewhat but tended to be in the morning hours (between 8 AM and noon) and generally took the place of the regular language (English or Kiswahili, as appropriate) class.

All tests were administered by myself or by my assistant. Copies of each test were distributed to each of the students in a class, instructions and examples were given, and students were then asked to complete the test on their own. In general, no time limits were imposed, but tests occasionally had to be collected from some students prior to completion due to constraints of the class schedule.

The English version of the TSA (TSA-E) was administered to the entire population of students. The test took approximately one and a half hours to administer. Each classroom of students was tested individually. Prior to administering the test, examples of each of the different types of test items (e.g., recognition, answers, comprehension) were given and the answers explained. Any questions about any

particular item on the test was answered (a vocabulary item for example) at any time during the testing period. However, no test item or part of a test item was read for any student.

The Kiswahili version of the TSA was identical in format to the English version. The procedures for test administration, too, were very similar. Examples of each of the different types of test items were explained prior to the test. This was done by a teacher fluent in Kiswahili. Questions were answered in the language they were posed (Kiswahili or English). The test took approximately one and a half hours to administer. Most students were able to complete the test before this time limit.

Variables

Subject Variables

The subject variables to be considered in the analyses that follow concern the sex, age, location (city and school), the grade (standard) in school, the particular class within each standard, and the native language of each subject.

The subjects of this study were 732 Kenyan primary school children in standards (grades) 6 through 8. This population was drawn from three primary schools: Our Lady of Mercy Primary School in Nairobi, Serani Primary School

for Boys and its sister school Mbaraki Primary School for Girls in Mombasa.

The distribution of sexes across the population was roughly equal (49% male and 51% female). This was not true, though, of the individual school populations. There were more female subjects than male subjects in the Nairobi school (174 females vs 129 males) and more males than females in the Mombasa sample (229 males and 200 females).

The students ranged in age from 10 to 17. The mean age for the population was 13.2 years. Almost 60% of the population was between the ages of 12 and 14. The remaining 40% of the population was relatively evenly distributed between the youngest (10-11) and oldest (16-17) age groups. The age distribution within the two cities differed considerably from each other and from the population mean. The Nairobi school children were considerably younger as a group than the Mombasa children. The mean age for the Nairobi group was 11.8 years while the mean age for the Mombasa group was 13.9 years.

Distributions of the subject population by city and age are shown in Table 4-1.

Table 4.1. Age Distribution by City for Kenyan Subjects.

Age	Nairobi	Mombasa
10	25	1
11	110	17
12	92	43
13	61	92
14	14	126
15	0	107
16	0	33
17+	0	10
	<u>303</u>	<u>429</u>

School Variables

Of the 732 subjects included in the test sample 303 students attended Our Lady of Mercy Primary School in Nairobi, 229 attended Serani Primary School for Boys and 220 attended Mbaraki Primary school for Girls in Mombasa. The population distribution across schools was, therefore, uneven. Only 41.3% of the population was drawn from Our Lady of Mercy while 58.7% of the population represented the combined population of the Serani and Mbaraki schools.

Due to the complex nature of the tasks required of the students who were tested, only the upper standards (Standards 6, 7, and 8) are reported in this study. Preliminary work indicated that the reading skills of the students were adequate enough only at these standards to yield meaningful results. Prior testing of younger children showed that while many of these students may have been able to deal with much of the linguistic material contained in the tests their

reading skills were not developed to the point where these linguistic abilities would be accurately revealed.

The population was fairly evenly distributed across the three standards. There were 242, 242, and 248 students in Standards 6, 7 and 8 respectively. This even distribution of students across standards for the whole population was seen within the individual schools as well. The Nairobi school did, however, have a slightly higher percentage of students in Standard 8 than did the Mombasa schools.

The total number of classes sampled for each standard in each school was not the same. Four classes for each standard were tested in the Mombasa schools, i.e., two classes for each of the standards for each school making a total of twelve classes sampled. There were only nine classes sampled in the Nairobi school because there were only three Standards 7 and 8 and two Standards 6 in the school. Only two classes for each standard were chosen from the Mombasa schools in order to keep the discrepancy between the population sizes of the two school areas as small as possible.

It was necessary to test at least two classes per school in Mombasa because of the common practice at these schools to assign students to classes based on perceived individual abilities. The students in the classes tested were described as being average to above average in academic ability and achievement.

The average number of students per classroom was roughly equivalent for Our Lady of Mercy and Serani (approximately 38 students per class). Mbaraki, having a generally smaller student population than the other schools, had an average of 33 students per class. The average number of students per classroom for the population as a whole was 37.

The teacher corps for both schools was very similar. They represented a mixture of ethnic and linguistic backgrounds. Most did not come from the area where they were teaching but had been hired from teacher training colleges located in various parts of the country.

The curriculum and schedule of classes was the same in all three schools and conformed to the standards set down on the Kenya Primary School Syllabi. The curriculum for the upper primary standards includes the following subjects: math, science, home science, geography, history, religion, music, arts and crafts, physical education, English, Kiswahili, and reading (English). Seven periods a week are devoted to English, four are devoted to Kiswahili and four to reading in English.

Language Variables

There were 27 different natively spoken languages represented in this student population and one "generic" language specified only as "Indian." Of these languages, only nine had 20 or more speakers with the remaining 21 languages being spoken by fewer than ten students each. For

purposes of analyses these languages were grouped into five categories: (1) Kiswahili, (2) Other African, (3) Arabic, (4) Asian, and (5) English. Native Kiswahili speakers were grouped separately from other African languages because this group of native speakers is of particular interest to the analysis of the test data. The number of speakers of each of the language groupings are: Kiswahili, 283; Other African, 263; Arabic, 80; Asian, 75; English, 31. The specific languages included (as identified by the students themselves) in the Asian group were Gujarti, Punjabi, Hindi, and "Indian." Among the languages included in the African group were Baajuni, Baluhya, Boran, Chonyi, Acholi, Creole, Cutchi, Digo, Embu, Girima, Kamba, Kisii, Gikuyu, Kalenjin, Luo, Meru, Nandi, Kirriya, Teso, and Taita.

Approximately 75% of the student population indicated that they spoke Kiswahili or another African language natively. The remaining 25% of the population was distributed between the remaining three non-African language groups with Arabic and Asian languages being most heavily represented. In the entire subject population only 16 students (approximately 2% of the population) indicated that they spoke more than one language natively. English was specified as a second language most frequently. Students who said they spoke more than one language listed either Kiswahili, Arabic or Luo as their primary language. Arabic was considered a second language for some students whose

first language was Kiswahili. In the analysis I did not consider the bilingual group separately. Rather, individual students were included in the appropriate language group based on the one language reported as being their primary language.

Within the "African" language classification, four languages accounted for approximately 82% of the subjects in this grouping. These four languages were Baluhya, Gikuyu, Kamba and Luo. Of these only Luo is a non-Bantu language.

The language distribution within the Nairobi and Mombasa populations did not parallel that of the pooled population. For example, while it can be said that Kiswahili is spoken natively by almost 39% of the population, it was indicated as being a native language of only about 9% of the Nairobi school sample. Yet, for the Mombasa sample, Kiswahili was spoken natively by 60% of the students. Comparing the populations of the two cities on the basis of language, the populations appear to be quite distinct linguistically from each other. The Nairobi population was comprised primarily of students who natively spoke African languages other than Kiswahili (65.5%). The Mombasa population, on the other hand, was made up largely of native Kiswahili speaking students (60%). Moreover, the secondary linguistic population differed in each population. The Nairobi school had a larger representative sample of Asian speakers (58 students out of 303 or 19.2%) and the Mombasa schools had an Arabic speaking population that

slightly exceeded in number to other African speaking population (i.e., 76 students as compared to 64 out of a total of 429). The native Asian speaking population in the Mombasa schools was small (only 3.8%).

Test Variables

Variables to be considered within the test instruments used in this research are based on distinct linguistic skills which are assessed by particular types of syntactic structures found on the TSA-E and TSA-S. Both recognition and comprehension tasks are employed by the tests.

The TSA-E was based on the TSA screening test developed by Quigley et al., 1978, and contained those items from their TSA Diagnostic Battery which had been shown to have optimal difficulty levels and the highest discriminatory indices when used with normal and hearing-impaired American children. The test items are grouped into 20 different subcategories of nine of the basic syntactic structures in English. The syntactic structures tested and their corresponding items are displayed in Table 4-2. The categorization of individual items follows that of Quigley, but may not be identical to it in every way.

The TSA-S includes all of the major structural categories found on the TSA-E. The number of items included in each category on the TSA-S differs from the TSA-E. This is due largely to the number of structural variations each language permits within the various categories. Verbal

Table 4-2. Categorization of Test Items for the TSA-E.

STRUCTURAL CATEGORY	SUM	ITEM NUMBERS
Negation	9	1,5,6,7,9,13,15,17,92
Conjunction		
Conjunction	7	73,74,75,76,77,78,94
Disjunction and Alternation	4	60,68,71,98
Determiners	14	2,8,10,11,14,16,18,19, 20,25,27,29,31,40
Question Formation		
Wh-words	3	3,28,30
Answer Environments	5	85,86,87,88,89
Yes/No Questions	3	22,38,45
Verb Processes		
Verb Sequence in Conjoined Sentences	3	55,58,59
Main Verbs, Linking Verbs, and Auxiliaries	3	12,23,33
Passives	4	79,80,81,84
Pronominalization		
Possessive Adjectives	1	65
Reflexives	3	54,61,62
Possessive Pronouns	3	56,57,64
Forward/Backward Pronominalization	3	53,66,70
Relativization		
Relative Comprehension	6	96,99,101,105,106,109
Relative Pronouns and Adjectives	4	63,67,69,72
Relative Embedding	6	82,83,97,110,111,114
Complimentization		
That Compliments	10	34,37,41,43,49,90,91, 93,95,100
Infinitives and Gerunds	10	21,36,39,44,46,47,48, 50,51,52
Nominalization	13	4,24,26,32,35,42,102, 103,104,107,108,112,113
	114	

structures in Kiswahili, for example, are morphologically complex compared to verbal structures in English. The greater number of items categorized under Verb Processes (see Table 4-3) reflects the greater variety of verbal structures available in Kiswahili. The results of the TSA-S were analyzed according to the categories of structures given in Table 4-2. The number of test items is indicated for each structural category.

Results

For each of the test instruments used in this research both correctness of responses and types of errors are of interest to the analysis. In the presentation of results to follow, I will consider only the extent to which subjects were able to answer test items correctly. In Chapter V, I will deal directly with analyses of the types of errors made. The results from the analysis of correct responses will be presented in terms of the test instruments, the categories of items within the test instruments, as well as the subject variables discussed above.

The results are reported in terms of population and group percentages and mean percentages of correct responses. The purpose of the test analyses is to determine, in the most general way, the levels of linguistic performance of the Kenyan primary school students as measured by the TSA-E and the TSA-S.

Table 4-3. Categorization of Test Items for the TSA-S.

STRUCTURAL CATEGORY	SUM	ITEM NUMBERS
Negation	6	1,5,6,10,12,85
Conjunction		
Conjunction	6	61,66,67,68,70,71
Disjunction and Alternation	4	52,59,62,91
Determiners	9	7,8,11,13,14,15,19,21, 32
Question Formation		
Wh-words	3	2,22,23
Answer Environments	5	77,78,79,80,81
Yes/No Questions	3	4,31,37
Verb Processes		
Verb Sequence in Conjoined Sentences	5	47,50,51,69,87
Main Verbs, Linking Verbs, and Auxiliaries	7	9,16,17,25,27,44,63
Passives	6	72,73,76,86,94,96
Pronominalization		
Possessive Pronouns	4	48,49,55,56
Forward/Backward Pronominalization	1	57
Relativization		
Relative Comprehension	10	82,89,90,92,97,99,100, 101,102,104
Relative Pronouns and Adjectives	9	36,45,54,58,60,64,65, 74,75
Complimentization		
That Compliments	6	29,33,35,83,84,88
Infinitives and Gerunds	7	34,38,39,40,42,43,98
Nominalization	11	3,18,20,24,26,28,30,41, 93,95,103
	104	

Following Quigley et al. (1978 p. 100) scores which range from 40% to 74% correct are of particular interest. It is within this range that a four-choice test is most discriminating for a population whose ability levels cannot be correctly predicted in advance (see Lord, 1952 for a complete discussion of establishing discrimination indices for tests of ability). The score of 74% correct was used as a cutoff score by Quigley et al. (1978) in determining the appropriateness of tests within the TSA Diagnostic Battery for particular population samples. That is, scores within this range indicate that the test items are reliably measuring some level of ability to comprehend those items. If the scores for particular categories of test items for the various population variables fall within this 40% to 74% range, then it can be assumed that for any stated population variable there are individuals who vary with respect to their ability to comprehend the items within a given category of items. By using this criterion, it is possible to identify specific groups or individuals within a population sample who have or have not mastered particular syntactic structures. In keeping to this established criterion, moreover, it is possible to relate the performance of the Kenyan school populations with the population samples reported by Quigley et al. (pp. 101-111).

Results of the TSA-E

The mean correct test scores for each structural category for the entire population of Kenyan students are given in Table 4-4. The table includes results from an American population of students for comparison. These comparative data were summarized from Quigley et al. (1978 p. 101). In this summarization, I included only those scores for students with I.Q. scores in the range of 90-130. In addition, I averaged the scores across the reported age ranges of 8 to 16 years. Those syntactic types which meet the criterion of appropriateness (those under 74% correct) are underlined.

Table 4-4 shows that for the entire population of Kenyan students the mean correct response for the whole test was 75.7%. The subcategory which had the highest mean percent correct response rate was the subcategory of Yes-No Questions (87.3%) followed by Negation (84.8%). Of the 20 subcategories, only seven evidenced responses below the chosen cutoff of 74%. The total number of items for these seven subcategories together (46 total) accounted for approximately 40% of all items on the test.

One of the more interesting findings that emerged from comparing these two populations was that the seven categories that were most difficult for the Kenyan students were exactly the same categories which proved most difficult for the American children (of somewhat younger ages). In addition, this group of structures included just those which

Table 4-4. Results from the TSA-E for Kenyan and American Populations.

Structure	KENYAN N=732 A=13.2		AMERICAN N=184 A=11.7	
	RANK	%COR	RANK	%COR
yes/no	1	87.3	5	76
negation	2	84.8	1	88
ans env	3	83.0	2	85
WH-words	4	81.8	3	82
rel pro/adv	5.5	79.5	12.5	59
inf/ger	5.5	79.5	12.5	59
reflex	7	79.3	11	61
determiner	8	79.1	8.5	71
poss pro	9	78.7	8.5	71
conj	10	76.4	7	72
mv,lv,aux	11	76.0	6	75
vb seq conj	12	75.6	4	77
poss adj	13	75.0	10	69
nomin	14	73.5	19.5	49
that-comp	15	70.6	17	51
rel comp	16	67.6	18	50
disj/alt	17	67.2	14.5	58
f/b pronom	18	67.0	16	53
embedding	19	63.8	19.5	49
passive	20	61.2	14.5	58
Overall		75.7		66

Source of American data: Quigley et al., 1978.

met the under 74% correct criterion for discriminatory value for the Kenyan students.

Although the overall mean scores were higher for the Kenyan students for these seven most difficult structures than they were for the American students (Kenyan = 67% correct, American = 53% correct), the difference between the lowest percentage score and the highest percentage score was equivalent for both groups. Yet, the structures that were, relatively speaking, most easy and most difficult were different for the two groups. Passive sentences were the most difficult for all structures for Kenyan students and the least difficult among these seven for American students. The opposite was true for Nominalized sentences. They were the most difficult for American students and the least difficult in this group of seven for the Kenyan students.

For the most part, however, the Kenyan test profile correlates nicely with that of the American population. The scores on the individual structural categories were generally higher for the Kenyan population than they were for the American population. But then, the Kenyan population was slightly older on average by about a year and a half. The category of Negation, and all of the Question structures, (i.e., Wh-word, Answer Environment, and Yes/No Questions) were among the easiest of all structures for both groups of students. The results from the Kenyan population indicate that this population as a whole performs linguistically at

the same levels as do American native English speaking students.

Test Results and Subject Population Variables

Sex. Within the Kenyan school population, the female population performed somewhat better than did the male population (Female = 71.08%, Male = 66.46%). However, in view of the fact that more males, proportionally, are in the Mombasa population than the Nairobi population and the Mombasa subjects scored lower than the Nairobi subjects (shown below), there does not appear to be any compelling reason to assign significant aspects of performance to the sex of the student--at least not for the general population of students.

Location, school, standard and class. Analysis of the performance on the TSA-E by Kenyan children is displayed in terms of cities, schools, standards, and classes in Table 4-5. This table displays all of the scores for these group variables, including those which exceed or fall below the upper and lower limits in the established discriminatory range. Table 4-6 contains only those scores within the set discriminatory limits.

The percentages in Table 4-5 show that the test was, overall, too easy for the Nairobi students. The lowest percent correct for the entire test was 84%, well above the discriminatory score of 74%. Very few categories of structures met the set discriminatory criterion for the Nairobi

Table 4-5. Percentages of Correct Responses on TSA-E: Structural Types
X Cities, Schools, Classes and Standards.

CITY SCHOOL STANDARD CLASS N= STRUCTURE	MOMBASA						NAIROBI													
	SERANI			MBARAKI			OUR LADY OF MERCY													
	6	7	8	6	7	8	6	7	8	6	7	8								
A B A B A B A B A B A B A B A B C	38	37	36	39	40	31	37	36	33	31	32	48	51	26	27	28	23	24	25	
yes/no	60	61	79	84	91	93	70	82	81	90	85	91	95	99	97	96	96	98	99	98
negation	58	65	76	81	83	91	59	77	83	86	84	85	94	95	92	95	94	96	97	98
ans env	40	57	71	76	82	93	63	78	85	85	85	84	93	95	90	93	93	98	99	98
wh-words	42	57	66	69	80	95	59	75	81	85	81	78	93	96	91	97	95	97	97	99
rel pro	52	55	63	75	80	84	56	75	74	70	82	70	85	94	93	96	90	97	98	98
inf/ger	48	56	69	70	73	85	59	71	74	77	77	73	90	92	92	94	94	97	95	99
reflexives	47	59	61	79	77	88	58	77	75	79	76	78	92	86	84	89	91	94	98	96
determiner	57	60	67	75	74	82	68	72	79	81	76	77	88	90	88	89	89	91	91	91
poss pro	53	60	72	73	77	81	61	73	79	76	82	76	86	89	84	87	91	91	97	97
conj	46	49	68	71	74	86	54	77	73	74	76	80	79	84	83	82	86	95	93	97
mv,lv,aux	40	43	67	67	68	88	41	58	56	66	73	68	97	97	92	99	97	99	99	97
verb seq	61	45	63	63	68	88	38	58	58	66	73	72	93	95	95	98	98	99	99	95
poss adj	53	46	72	72	85	80	52	65	72	82	81	78	77	82	65	76	87	89	92	97
nom:n	39	49	62	68	71	86	52	70	63	65	75	72	81	86	80	88	85	94	91	90
that-comp	37	54	57	63	68	80	51	61	50	63	70	69	81	82	79	85	82	88	88	93
rel.com.	37	44	56	58	58	77	43	55	63	56	67	57	78	86	77	87	84	92	91	91
disj alt	48	51	53	62	62	81	51	58	60	63	68	71	72	72	76	74	69	82	79	92

Continued

Table 4-5. Continued.

CITY SCHOOL STANDARD CLASS N= STRUCTURE	MOMBASA			MBARAKI			NAIROBI													
	SERANI						OUR LADY OF MERCY													
	6	7	8	6	7	8	6	7	8											
	A	B	A	B	A	B	A	B	A	B	C									
	38	37	36	39	40	31	37	36	33	31	32	48	51	26	27	28	23	24	25	
f/b pronom	40	50	59	66	65	76	48	58	65	65	76	68	70	70	76	79	71	77	80	85
embedding	32	34	49	53	59	71	42	56	49	56	73	57	73	78	71	78	74	87	89	92
passive	21	38	51	60	58	73	28	41	47	53	57	51	68	75	76	84	73	84	86	76
Total	55	52	64	69	73	84	53	69	68	72	76	73	84	87	84	88	87	92	93	94

Note: Scores for all Kenyan students, N=732. Total percent scores represented scores summed across all structure types.

Table 4-6. Continued.

CITY	MOMBASA			NAIROBI		
SCHOOL	SERANI			OUR LADY OF MERCY		
STANDARD	6			7		
CLASS	A	B	A	A	B	A
N=	38	37	36	39	40	31
STRUCTURE	3	8	3	3	3	3
f/b pronom	40	50	59	66	65	48
embedding	32	34	49	53	59	71
passive	21	38	51	60	58	73
Total	45	52	64	69	73	84

Note: Source for all Kenyan Students, N=732. Total percent scores represent scores summed across all structure types.

school students. All of the Standard 8s and one of the Standard 7s scored above 74% in every category. A class by class comparison revealed that the performance on the test was about the same for each class in the Nairobi school. The difference between the Nairobi class having the lowest mean correct score (Standards 6A and 7A = 84%) and that which had the highest (Standard 8C = 94%) was not exceptionally great. Each of these scores exceeded considerably the upper limit of the discriminatory range.

The Mombasa schools, on the other hand, exhibited much diversity between the classes in each of the schools. This diversity was paralleled in both schools although it did not apply equally in each standard. The greatest differences in mean correct scores was between the two Standard 8 classes in Serani (8A = 73%; 8B = 74%) and the two Standard 6 classes in Mbaraki (6A = 53%; 6B = 69%).

The distribution of scores for the Mombasa schools was within the discriminatory limits (40%-74%) for 92% of the population (refer to Table 4-6). For this group of students, then, there was an adequate distribution of test items that were easy and difficult. There were five categories that were too difficult for just one class of students in Serani 6A. These were the categories of Nominalization, That-Complement, Relative Comprehension, Embedding, and Passive. There were two categories (Embedding and Passive) that were too difficult for the students in Serani class 6B.

The information on Table 4-6 also shows that there was a general trend for scores to improve over standards for both school populations. The Standard 6 students in each of the schools had lower mean percent correct responses to more categories than did Standard 7 students. This improvement was most apparent from the scores for the Mombasa sample where there was an improvement in scores, as well, between Standards 7 and 8, although the improvement was not as dramatic as that between Standards 6 and 7.

Along with an increase in the percent of correct scores over the standards, there was also a reduction in the number of categories meeting the cutoff score of 74%. The scores for every syntactic category were below the cutoff for three of the four Standards 6. Only half of the categories on the test or less were below the cutoff by Standard 8.

Age. There was a considerable difference in mean correct responses between students of different ages (see Table 4-7). This difference, however, because of the ages to which the difference refer, cannot be viewed as being developmental. The mean difference between the average scores for the youngest students (ages 10-12) and those of the older students (those between 13 and 16) was 6.27 or 14%, with the younger students' scores being higher. It was only the population of older students (17+ years) who scored below 74% correct on every structural type on the test.

For clarity, I have taken Table 4-7 and reduced it to form Table 4-8. Table 4-7 presents the full array of test

Table 4-7. Percentages of Correct Responses on TSA-E: Structural Type X Ages of Students.

Structure	TOTAL		AGE	N=									
	RANK	%COR		10	11	12	13	14	15	16	17		
				26	127	135	153	141	107	33	10		
7 yes/no	1	87.3		93.6	94.7	89.4	86.3	82.5	84.4	89.9	62.5		
1 negation	2	84.8		92.3	93.4	87.7	84.2	79.5	79.3	84.2	68.1		
6 ans env	3	83.0		91.5	92.8	86.2	81.2	77.4	77.4	80.6	70.0		
5 WH-words	4	81.8		93.1	92.8	86.5	78.0	75.0	77.0	79.4	60.0		
16 rel pro/adv	5	79.5		88.3	90.5	84.3	78.9	72.8	72.2	75.8	53.1		
19 inf/ger	5	79.5		88.5	90.4	86.1	77.8	71.6	72.4	75.5	57.5		
12 reflexives	7	79.3		89.7	89.3	81.7	79.5	72.6	74.4	74.7	66.7		
4 determiner	8	79.1		88.2	87.4	83.1	78.2	72.1	74.6	79.2	59.8		
13 poss pro	9	78.7		86.5	85.5	84.4	77.5	72.3	73.1	82.6	59.4		
2 conj	10	76.4		82.4	81.1	80.4	77.1	69.3	73.0	73.6	60.7		
9 mv,lv,aux	11	76.0		91.0	92.0	84.4	72.1	65.7	67.3	64.3	62.5		
8 verb seq	12	75.6		85.7	92.0	83.9	71.5	65.2	65.1	72.7	62.5		
11 poss adj	13	75.0		80.7	76.2	75.6	73.2	70.9	76.6	90.9	62.5		
20 nomin	14	73.5		81.7	82.6	80.3	71.7	66.5	66.3	71.1	55.8		
18 that-comp	15	70.6		82.3	80.6	77.1	70.2	62.3	63.3	63.3	50.0		
15 rel comp	16	67.6		80.8	79.4	78.3	67.3	57.3	55.6	60.1	47.9		
3 disj/alt	17	67.2		66.3	73.8	71.5	67.7	63.7	60.0	67.2	50.0		
14 f/b pronom	18	67.0		66.7	71.2	69.6	65.4	66.7	63.3	70.7	50.0		
17 embedding	19	63.8		73.7	71.6	74.1	64.2	53.8	53.8	62.1	47.9		
10 passive	20	61.2		63.5	71.2	70.7	61.4	50.5	54.0	54.5	56.2		

Note: Total N=732. Ranks and Total Correct Scores are based on the scores gathered for the population of students as a whole.

Table 4-8. Discriminatory Percentages of Correct Responses on TSA-E: Structural Type X Ages of Students.

Structure	TOTAL		AGE	N=	10	11	12	13	14	15	16	17
	RANK	%COR										
7 yes/no	1	87.3										62.5
1 negation	2	84.8										68.1
6 ans env	3	83.0										70.0
5 WH-words	4	81.8										60.0
16 rel pro/adv	5.5	79.5							72.8	72.2		53.1
19 inf/ger	5.5	79.5							71.6	72.4		57.5
12 reflexives	7	79.3							72.6			66.7
4 determiner	8	79.1							72.1			59.8
13 poss pro	9	78.7							72.3	73.1		59.4
2 conj	10	76.4							69.3	73.0	73.6	60.7
9 mv,lv,aux	11	76.0							72.1	65.7	67.3	62.5
8 verb seq	12	75.6							71.5	65.2	65.1	72.7
												62.5
11 poss adj	13	75.0							73.2	70.9		62.5
20 nomin	14	73.5							71.7	66.5	66.3	71.1
15 rel comp	16	67.6							67.3	57.3	55.6	60.1
3 disj/alt	17	67.2							66.3	73.8	71.5	67.7
14 f/b pronom	18	67.0							66.7	71.2	69.6	65.4
17 embedding	19	63.8							66.7	63.3	70.7	50.0
10 passive	20	61.2							73.7	71.6	64.2	53.8
									63.5	71.2	70.7	61.4
										50.5	54.0	54.5
												56.2

Note: Total N=732. Ranks and Total Correct Scores are based on the scores gathered for the population of students as a whole.

scores while Table 4-8 includes only those scores which met the cutoff criterion score of 74%.

As the data on Table 4-8 show, the test performance of 10-, 11- and 12-year olds is quite similar. So too, is the performance of the group of 13- to 16-year olds. Four categories of structures fairly consistently met the discriminatory criterion (Disjunction and Alternation, Forward and Backward Pronominalization, Embedding, and Passive) for the 10- to 12-year old age group. The number of categories meeting this criterion increased to nine for the 13- to 16-year old age group. These categories were Conjunction, Main Verb, Linking Verb and Auxiliaries, Verb Sequences, Nominalization, Relative Comprehension, Disjunction and Alternation, Forward and Backward Pronominalization, Embedding, and Passive. The correct response rate for the 13- to 16-year old age group was below 74% on approximately 60% of the test.

Language. The following two tables (Tables 4-9 and 4-10) present the data analyzed by particular structural types according to the language groupings of students. The first table (Table 4-9) includes all of the test scores, even those which exceeded the discriminatory limits. The second table (Table 4-10) presents only the discriminatory scores. Scores from the TSA-E for the total student population are given for comparison.

These data showed that only two language groups, Kiswahili and Arabic, scored within the criterion on the

Table 4-9. Percentage of Correct Responses on TSA-E:
Structural Type X Language Group.

STRUCTURE	RANK	TOTAL	LANGUAGE GROUP				
		COR% N=732	AFR 263	ARB 80	ASN 75	ENG 31	SWA 283
yes/no	1	87.3	93	85	96	97	80
negation	2	84.8	92	80	92	91	77
ans env	3	83.0	91	77	94	86	75
WH-word	4	81.8	80	74	95	86	72
rel pro/adv	5.5	79.5	90	70	88	85	70
inf/ger	5.5	79.5	89	73	91	84	69
reflexives	7	79.3	85	77	89	84	72
determiner	8	79.1	86	75	88	86	71
poss pro	9	78.7	86	76	85	85	71
conj	10	76.4	82	72	86	82	69
mv,lv,aux	11	76.0	91	63	92	86	61
verb seq	12	75.6	90	62	88	84	62
poss adj	13	75.0	82	73	74	81	69
nomin	14	73.5	82	63	81	82	66
that-comp	15	70.6	80	62	80	75	61
rel comp	16	67.6	79	53	79	75	58
disj/alt	17	67.2	73	64	74	67	62
f/b pronom	18	67.0	73	61	74	70	62
embedding	19	63.8	74	49	76	73	55
passive	20	61.2	72	49	76	69	50
All Structures		75.8	84.2	68.2	85.2	81.6	67.1

Table 4-10. Discriminatory Percentages of Correct Responses on TSA-E: Structural Types X Language Group.

STRUCTURE	RANK	TOTAL	AFR	LANGUAGE GROUP			
		COR% N=732		ARB	ASN	ENG	SWA
			263	80	75	31	283
yes/no	1	87.3					
negation	2	84.8					
ans env	3	83.0					
WH-words	4	81.8					72
rel pro/adv	5.5	79.5		70			70
inf/ger	5.5	79.5		73			69
reflexives	7	79.3					72
determiner	8	79.1					71
poss pro	9	78.7					71
conj	10	76.4		72			69
mv,lv,aux	11	76.0		63			61
verb seq	12	75.6		62			62
poss adj	13	75.0		73			69
nomin	14	73.5		63			66
that-comp	15	70.6		62			61
rel comp	16	67.6		53			58
disj/alt	17	67.2	73	64		67	62
f/b pronom	18	67.0	73	61		70	62
embedding	19	63.8		49		73	55
passive	20	61.2	72	49		69	50
All Structures		75.8	84.2	68.2	85.2	81.6	67.1

test. The other language groups had total mean scores which greatly exceeded the upper limit of the discriminatory range for all or most of the syntactic categories.

The students whose native language was Kiswahili had a total mean correct score of 67%. The Arabic speaking population had a total mean correct score of 68%. Together, these two language populations comprised 50% of the total population and 80% of the Mombasa population.

The performance of these two groups was quite similar across all of the test categories. On the seven categories which were shown to be the most discriminating for the whole population, the scores from these two language groups were virtually identical (Arabic = 57% and Kiswahili = 59%).

Summary of the Results of the Kenyan Student Population for the TSA-E.

It is generally assumed that a psychometrically good test is one in which approximately 50% of the population has a mean correct score between 40% and 60% (Lord, 1952, cited also in Quigley et al., 1978). However, as Quigley et al. pointed out, a score of 74% correct is sufficiently discriminating for practical uses on a four alternative multiple choice test. The results for the entire Kenyan primary school population showed that only seven grammatical categories on the TSA-E had the potential of meeting this rigorous standard. The categories that included Nominalizations, That-Complements, Relative Complements, Disjunction and Alternation, Forward and Backward Pronominalization,

Embedding, and Passives were the ones that were the most discriminating for the Kenyan population as a whole. These seven categories, moreover, were the same seven that Quigley's et al. data from the TSA show to be the most difficult for American English speaking children of slightly younger ages.

On the whole test, the Kenyan children had a higher percentage of correct responses overall than did the American children, but the general response profiles of both the populations were very similar. Those structures that tended to be easy and difficult for the American population tended to be the same that were easy and difficult for the Kenyan population, although the within population rank ordering of the structures differed slightly. For example, relatively speaking, within the seven categories of structures which met the criterion for both Kenyan and American populations, Nominalization were easier for the Kenyan students (Rank Order = 14 in 20) than for the American student (Rank Order = 19.5) while Passives were more difficult (Rank Order = 20) than for the American school group (Rank Order = 14.5). This slight difference in the rank ordering of structural categories is not surprising since very few of the Kenyan subjects come to acquire English natively. What is remarkable though is how similar the language profiles of the two groups are in view of the fact that Kenyan children have acquired English as a second language and have acquired

it primarily (if not wholly) through school largely from a literate (written) representation.

While the cutoff score of 74% was applicable to the aforementioned seven categories for the entire population, further analysis revealed that this applied differently to different subgroups within the population. The scores from Tables 4-5 and 4-6 showed that the test scores within the selected discriminatory range of 40% to 74% correct applied only to the students in the Mombasa population. The test did not meet the criteria for any of the Nairobi students when the data were grouped according to standard (i.e. grade level) by school. Even so, the test results indicated improvement over standards for all school populations. Standard 8 students had higher mean correct percent scores across all categories of structures than did Standard 6 students.

Additionally, it was demonstrated that there was considerable variation in scores between classes within the Mombasa schools. But, there was little variation between classes in the Nairobi school. There was one class of students (6A) in Serani for which five categories were below the lowest point (40%) in the discriminatory range. That is, the categories of Nominalization, That-Complements, Relative Comprehension, Embedding, and Passive were too difficult for the students in this one class. Two categories (Embedding and Passive) were found to be below the criterion for the students in Serani class 6B.

In terms of overall percent correct scores, only one class in the Mombasa sample compared with any of the classes from the Nairobi sample. Serani 8B had a mean correct score of 84% for the test. This class performed most like class 7A in Our Lady of Mercy.

The results of the data when grouped by age (see Tables 4-7 and 4-8) were exactly the opposite of the data when grouped by standard. As noted above, the scores tended to improve across standards. They did not improve across ages, however. The younger students scored better overall than did the older students.

There were some similarities observed within certain age ranges. There was, for example, little variation in performance on test within the 10- to 12-year old age group. The same was observed for the 13- to 16-year old range group. Four categories (Disjunction and Alternation, Forward and Backward Pronominalization, Embedding, and Passive) consistently met the discriminatory criteria for the younger group of students. These four along with Conjunction, Main Verb, Linking Verb and Auxiliaries, Verb Sequences in Conjoined Structures, Nominalization, and Relative Comprehension, were within the discriminatory range for the 13- to 16-year old age group.

Only two populations grouped by language were shown to have performed within the set discriminatory standards (Table 4-10). These were the two populations of Arabic and Kiswahili speaking students. The Kiswahili speaking

population scored below 74% on 17 out of the 20 categories on the test. Thirteen categories were shown to be discriminating for the Arabic speaking population. The performances of these two language groups were, moreover, shown to be virtually identical on the seven structures that were the most discriminating for the total population.

Results of the TSA-S

The results reported in this section are from the data recorded from the administration of the TSA-S. The structure of the TSA-S has been described in Chapter III. Since this test was administered primarily in order to accumulate linguistic data from native Kiswahili speaking students (and only secondarily to accumulate data on the language from non-native speakers) it was administered only to the students in the two Mombasa schools. Approximately 60% of the 429 students in these schools reported that they spoke Kiswahili natively. There was a total of 104 items on the test. These 104 items were classified according to 18 categories of syntactic structures. Table 4-3 presented the number of items and the specific items contained in each category.

The following table (Table 4-11) summarizes the results of the TSA-S for the Mombasa student population in terms of correct responses by category of grammatical structure. The responses have been ranked according to the highest and lowest mean percent correct response rates. Those

Table 4-11. Results from the TSA-S for the Mombasan Student Population.

Structure	RANK	% COR
disj/alt	1	89.9
Wh- words	2	87.5
verb seq	3.5	86.2
that-comp	3.5	86.1
f/b pronom	5	81.3
determiner	6	80.3
poss pro	7	78.9
yes/no	8	74.8
negation	9	70.1
reflexives	10	<u>69.3</u>
ans env	11	<u>67.8</u>
inf/ger	12	<u>67.4</u>
rel pro/adv	13	<u>66.6</u>
passive	14	<u>64.3</u>
nomin	15	<u>62.9</u>
mv,lv,aux	16	<u>55.6</u>
conj	17	<u>54.8</u>
rel comp	18	<u>50.6</u>
Overall		71.1

categories where the mean correct response was within the discriminatory range (40%-74%) are underlined.

For this population of 429 subjects (Mean Age = 13.8), the total percent correct for the whole test was 71%. The mean percent correct scores for eight categories of structures fell above the cutoff score of 74%. Ten categories of structures, or approximately 65% of the test, exhibited mean correct scores that fell under this figure. These ten categories were Negation, Reflexives, Answer Environment, Infinitives and Gerunds, Relative Pronouns and Adverbs, Passives, Nominalization, Main Verbs, Linking Verbs and Auxiliaries, Conjunction, and Relative Comprehension. Comprehension of relative structures was the most difficult category of test items for this population with a mean correct score of approximately 50%. The category with the most correct responses was Disjunction and Alternation. This population scored almost 90% correct on this structure.

Test Results and Population Variables

School, standard and class. There is no way to distinguish the variables of Sex and School in this population, since the two schools are segregated by sex. As can be seen in Table 4-12 the girls who attended Mbaraki did much better than the boys at Serani across most of the categories of structures. In this table, I have underlined the scores that fall above the discriminatory range so that the differences in the performance between these groups is made

Table 4-12. Percentages of Correct Responses on the TSA-S: Structural Types X Schools, Standards and Classes.

SCHOOL STANDARD CLASS N= STRUCTURE	SERANI								MBARAKI							
	6		7		8		6		7		8					
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	38	37	36	39	39	40	31	37	36	33	31	32				
disj/alt	72	80	88	79	65	86	92	82	98	89	89	90				
Wh- words	61	71	85	78	85	98	89	89	89	80	80	83				
verb seq	67	65	87	72	96	99	89	84	94	91	96	93				
that-comp	66	72	84	78	91	88	90	82	81	92	93	94				
f/b pronom	66	71	72	69	90	88	81	86	92	85	90	91				
determiner	61	71	79	72	85	87	82	77	85	89	89	88				
poss pro	60	72	74	71	88	87	81	76	83	92	89	91				
yes/no	46	60	67	69	83	84	77	80	80	80	87	88				
negation	58	63	68	61	65	76	73	71	75	77	82	80				
reflexives	50	68	75	55	73	59	75	66	74	80	84	81				
ans env	44	57	65	64	54	81	72	72	74	72	86	78				
inf/ger	49	55	62	59	70	78	73	68	70	73	86	70				
passive	46	59	65	55	58	76	58	64	66	68	84	80				
nomin	48	50	62	55	60	74	65	61	70	64	79	80				
mv,lv,aux	36	50	55	59	55	55	56	69	58	62	55	57				
conj	45	42	50	47	54	64	58	54	54	65	61	65				
rel comp	36	44	49	49	45	62	54	53	52	41	64	61				

visibly clear. The mean percent correct on the whole test for the girls at Mbaraki was 76.84% compared to 66.10% for the Serani boys.

The results (Table 4-12) showed that the eight categories of structures that were easiest for the population as a whole (i.e. those with mean scores above the cutoff) were, without exception, the easiest for the girls in this population. Only the two Standard 8 classes in the Serani school population had mean correct scores on these eight structures that compared with the Mbaraki school.

The classes within each standard at Mbaraki appeared to be more alike than the classes within each of the standards at Serani. The scores recorded from Serani 6A were obviously lower than those for 6B. The scores for the students in Standard 8B appeared to be much higher for almost every category than the scores for the students in 8A. Later analyses will attempt to determine the factors influencing this within population difference.

The following table (Table 4-13) is derived from the preceding table and contains only those test scores for categories of structures that fell below the 74% upper limit of the discriminatory range. Note that the scores for Serani 6A on two categories of structures (Main Verb, Linking Verb and Auxiliaries, and Relative Comprehension) fell below the lower (40% correct) limit.

Table 4-13, with the exceptions noted above, displays only those scores which met the set discriminatory

Table 4-13. Discriminatory Percentages of Correct Responses on the TSA-S: Structural Types X Schools, Standards and Classes.

SCHOOL STANDARD CLASS N= STRUCTURE	SERANI								MBARAKI							
	6		7		8		6		7		8		6		7	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	38	37	36	39	39	40	31	37	36	33	31	32				
disj/alt	72			65												
Wh- words	61	71														
verb seq	67	65		72												
that-comp	66	72														
f/b pronom	66	71	72	69												
determiner	61	71		72												
poss pro	60	72	74	71												
yes/no	46	60	67	69												
negation	58	63	68	61	65		73	71								
reflexives	50	68		55	73	59		66	74							
ans env	44	57	65	64	54		72	72	74	72						
inf/ger	49	55	62	59	70		73	68	70	73					70	
passive	46	59	65	55	58		58	64	66	68						
nomin	48	50	62	55	60	74	65	61	70	64						
mv,lv,aux	36	50	55	59	55	55	56	69	58	62	55	57				
conj	45	42	50	47	54	64	58	54	54	65	61	65				
rel comp	36	44	49	49	45	62	54	53	52	41	64	61				

criterion. As can be seen, the students from Serani scored most frequently within the 40% to 74% criterion range. In general, there was a tendency for test performance on each category of structures to improve from standard to standard. Standard 8 students overall had higher mean correct scores than did Standard 7 students. The Standard 8 students in Mbaraki achieved scores that exceeded the maximum cutoff figure for the majority of structural categories.

Not every category, though, showed an improvement in scores across all standards. There were essentially no differences in the performance on Passives, and Main Verbs, Linking Verbs and Auxiliaries across the three standards in both of the school populations. The mean percent scores for the comprehension of relative clauses (Rel Comp) were about the same for Standards 6 and 7 in both schools (the Mbaraki scores were a bit higher), but there was quite a dramatic increase in percent correct by Standard 8 (of about 10%).

Although the performance of the Mbaraki students was overall much higher than that of the Serani students, it was very similar with respect to how these categories ranked in order of difficulty. The categories of structures with the most correct responses and those with the least correct responses were the same for both school populations.

Age. The data from the TSA-S for the Mombasan students were arranged and analyzed according to the ages of the students. Table 4-14 shows the data arranged according to correct mean responses by the ages of the students in this

Table 4-14. Percentages of Correct Responses on the TSA-S: Structural Types X Ages of Students.

STRUCTURE	RANK	AGE N=	11 17	12 43	13 92	14 126	15 107	16 33	17 10
dis/alt	1		100	81	89	91	91	94	78
Wh-words	2		94	78	82	89	90	99	83
verb seq	3.5		95	75	79	89	92	93	72
that-comp	3.5		97	80	81	88	91	91	75
f/b pronom	5		88	79	72	86	82	94	63
determiner	6		78	76	75	82	84	86	75
poss pro	7		79	72	72	80	86	85	75
yes/no	8		88	<u>65</u>	<u>66</u>	75	80	86	81
negation	9		<u>71</u>	<u>66</u>	<u>67</u>	<u>71</u>	<u>72</u>	<u>76</u>	<u>69</u>
reflexives	10		<u>85</u>	<u>65</u>	<u>67</u>	<u>68</u>	<u>70</u>	<u>80</u>	<u>56</u>
ans env	11		<u>76</u>	<u>66</u>	<u>63</u>	<u>67</u>	<u>71</u>	<u>74</u>	<u>70</u>
inf/ger	12		<u>71</u>	<u>63</u>	<u>62</u>	<u>70</u>	<u>61</u>	<u>71</u>	<u>57</u>
rel pro/adv	13		<u>73</u>	<u>67</u>	<u>62</u>	<u>68</u>	<u>68</u>	<u>72</u>	<u>56</u>
passive	14		<u>66</u>	<u>60</u>	<u>61</u>	<u>64</u>	<u>66</u>	<u>75</u>	<u>63</u>
nomin	15		<u>67</u>	<u>58</u>	<u>58</u>	<u>64</u>	<u>65</u>	<u>71</u>	<u>53</u>
mv,lv,aux	16		<u>57</u>	<u>57</u>	<u>57</u>	<u>56</u>	<u>54</u>	<u>56</u>	<u>50</u>
conj	17		<u>57</u>	<u>51</u>	<u>54</u>	<u>55</u>	<u>64</u>	<u>61</u>	<u>50</u>
rel comp	18		<u>60</u>	<u>48</u>	<u>46</u>	<u>52</u>	<u>50</u>	<u>54</u>	<u>58</u>
TOTAL			76	<u>66</u>	<u>67</u>	<u>72</u>	<u>73</u>	77	<u>65</u>

population. The scores meeting the discriminatory criterion were underlined. For greater ease of reference, Table 4-15 omits all of the scores except those which fell within the discriminatory range.

There was no general tendency for the mean percent correct scores for the entire test to improve over age (see Totals in Table 4-14). As a matter of fact, the total mean correct scores revealed that the performance on the test was similar for the 12-, 13-, and 17- (66%, 67% and 65%) year-olds and for the 11-, 14-, 15-, and 16-year-olds (76%, 72%, 73% and 77%). Two age groups, the 11-year-olds and the 16-year-olds, had an overall mean correct score which was above the cutoff score. These two age groups did not exceed the criterion on all of the categories however.

With very few exceptions, the scores for all of the age groups fell within the discriminatory range on each of the 10 categories (i.e., the categories ranked 9 to 18) that were shown to be under the cutoff for the whole population and for the school subgroups.

The 11- and 14- to 16-year-old age groups almost always had a higher rate of mean correct scores than did the 12- to 13- and 17-year-old age group. The only categories that did not show a difference between these two groups were Main Verbs, Linking Verbs and Auxiliaries, and Conjunctions. These are the same two structural categories for which no change from one standard to the next in school was noted.

Table 4-15. Discriminatory Percentages of Correct Responses on the TSA-S: Structural Types X Ages of Students.

STRUCTURE	RANK	AGE N=	11 17	12 43	13 92	14 126	15 107	16 33	17 10
dis/alt	1								
Wh-words	2								
verb seq	3.5								<u>72</u>
that-comp	3.5								
f/b pronom	5				<u>72</u>				<u>63</u>
determiner	6								
poss pro	7			<u>72</u>	<u>72</u>				
yes/no	8			<u>65</u>	<u>66</u>				
negation	9		<u>71</u>	66	67	71	72		69
reflexives	10			<u>65</u>	<u>67</u>	<u>68</u>	<u>70</u>		<u>56</u>
ans env	11			66	63	67	71	74	70
inf/ger	12		<u>71</u>	<u>63</u>	<u>62</u>	<u>70</u>	<u>61</u>	<u>71</u>	<u>57</u>
rel pro/adv	13		<u>73</u>	<u>67</u>	<u>62</u>	<u>68</u>	<u>68</u>	<u>72</u>	<u>56</u>
passive	14		<u>66</u>	<u>60</u>	<u>61</u>	<u>64</u>	<u>66</u>		<u>63</u>
nomin	15		<u>67</u>	<u>58</u>	<u>58</u>	<u>64</u>	<u>65</u>	71	<u>53</u>
mv,lv,aux	16		<u>57</u>	<u>57</u>	<u>57</u>	<u>56</u>	<u>54</u>	<u>56</u>	<u>50</u>
conj	17		<u>57</u>	<u>51</u>	<u>54</u>	<u>55</u>	<u>64</u>	<u>61</u>	<u>50</u>
rel comp	18		<u>60</u>	<u>48</u>	<u>46</u>	<u>52</u>	<u>50</u>	<u>54</u>	<u>58</u>

Because the group of 11-year-olds performed on par with the older students in this sample and the 17-year-olds performed quite like the younger students, there is reason to suspect that any general improvement of scores on the test were effected more by factors which relate to the school environment itself than to those related to maturational development (i.e. age factors alone). Further analysis will be presented in Chapters V and VII which will lend further confirmation to this observation.

Language. When the data were analyzed according to language groups each group was found to have a total mean correct percent score below the established cutoff. Tables 4-16 and 4-17 display these data. The percentages compiled for the total population are given for comparison. As with the other tables, Table 4-16 displays the complete array of data (the scores in the discriminatory range are underlined) and Table 4-17 contains only those data within the established limits.

There was an overall consistency in the patterning of the mean correct scores across all categories of structures with respect to the language groups. The group of English speakers had the lowest mean correct score of all of the language groups (65%). The overall mean correct scores for the other four groups ranges from 71% correct to 75% correct. The African and Asian populations scored just slightly better overall than did the Kiswahili and Arabic groups.

Table 4-16. Percentages of Correct Responses on the TSA-S:
Structural Type X Language Group.

STRUCTURE	RANK	TOTAL N=429	AFR 64	ARB 76	ASN 16	ENG 14	SWA 257
dis/alt	1	90	93	96	86	92	88
Wh-words	2	88	99	87	85	66	86
verb seq	3.5	86	88	87	88	79	86
that-comp	3.5	93	93	85	91	71	86
f/b pronom	5	81	80	80	81	79	82
determiner	6	80	81	83	76	73	80
poss pro	7	79	75	81	81	73	80
yes/no	8	75	78	78	69	61	75
negation	9	70	71	73	71	66	70
reflexives	10	69	68	77	75	64	67
ans env	11	68	73	70	70	63	66
inf/ger	12	67	68	68	67	58	68
rel pro/adv	13	66	72	67	66	56	66
passive	14	64	61	69	57	67	64
nomin	15	63	63	65	52	62	63
mv,lv,aux	16	56	60	51	54	44	57
conj	17	55	82	56	56	48	54
rel comp	18	51	50	53	53	51	51
TOTAL		71	75	74	71	65	71

Table 4-17. Discriminatory Percentages of Correct Responses on the TSA-S: Structural Type X Language Group.

STRUCTURE	RANK	TOTAL N=429	AFR 64	ARB 76	ASN 16	ENG 14	SWA 257
dis/alt	1	90					
Wh-words	2	88					
verb seq	3.5	86					
that comp	3.5	93				<u>71</u>	
f/b pronom	5	81					
determiner	6	80				<u>73</u>	
poss pro	7	79				<u>73</u>	
yes/no	8	75			<u>69</u>	<u>61</u>	
negation	9	70	<u>71</u>	<u>73</u>	<u>71</u>	66	70
reflexives	10	<u>69</u>	<u>68</u>			<u>64</u>	<u>67</u>
ans env	11	<u>68</u>	<u>73</u>	70	70	<u>63</u>	<u>66</u>
inf/ger	12	<u>67</u>	<u>68</u>	<u>68</u>	<u>67</u>	<u>58</u>	<u>68</u>
rel pro/adv	13	<u>66</u>	<u>72</u>	<u>67</u>	<u>66</u>	<u>56</u>	<u>66</u>
passive	14	<u>64</u>	<u>61</u>	<u>69</u>	<u>57</u>	<u>67</u>	<u>64</u>
nomin	15	<u>63</u>	<u>63</u>	<u>65</u>	<u>52</u>	<u>62</u>	<u>63</u>
mv,lv,aux	16	<u>56</u>	<u>60</u>	<u>51</u>	<u>54</u>	<u>43</u>	<u>57</u>
conj	17	<u>55</u>		<u>56</u>	<u>56</u>	<u>48</u>	<u>54</u>
rel comp	18	<u>51</u>	<u>50</u>	<u>53</u>	<u>54</u>	<u>51</u>	<u>51</u>

The scores which were within the discriminatory range were generally consistent across all the language groups. There were ten structural categories which met the criterion: Negation, Reflexives, Answer Environment, Infinitives and Gerunds, Relative Pronouns and Adverbs, Passive, Nominalization, Main Verbs, Linking Verbs and Auxiliaries, Conjunction and Relative Comprehension. The Arabic and Asian groups exceeded the 74% cutoff score on the category of Reflexives. The African group performed much better than the rest on Conjunctions (82% correct).

Summary of the Results of the Mombasan Student Population for the TSA-S

Although the mean correct score for the whole test was less than 74%, eight categories of structures exceeded this figure. These categories were Disjunction and Alternation, Wh-words, Verb Sequences in Conjoined Structures, That Complements, Forward and Backward Pronominalization, Determiners, Possessive Pronouns, and Yes/No Questions.

When the data were grouped according to School (and by default Sex), it was discovered that the scores on these items for the Serani boys in Standards 7 and 8 met the discriminatory criterion. However, on the analyses by Age and by Language, these eight categories of structures consistently exceeded the cutoff score for all groups.

The scores on the remaining categories which met the criterion (Negation, Reflexives, Answer Environments, Infinitives and Gerunds, Relative Pronouns and Adverbs,

Passives, Nominalization, Main Verbs, etc., and Conjunctions) were likewise generally consistent across all variables considered. A general tendency for scores to improve within these categories with standard in school and with age was noted. Standard 8 students had higher scores than did students in the lower standards on most of the categories of structures. Older students (14- to 16-years old) tended to score higher on most of the categories than younger students (12- to 13-years old). The group of 11-year-old students, though, had scores that more closely resembled the older group and the group of 17-year-olds had scores that were very similar to the younger group. It seems likely that the improvement in scores is due more to schooling than to age. In later chapters, this observation will be investigated further.

There did not appear to be any difference between the language groups with respect to correct mean scores on the various categories of structures. The small group of students who reported to speak English natively had the lowest mean correct score for the test and had scores that met the criterion on most of the categories of structures. The categories that were easiest for all of the other subgroups in the population were also the easiest for all the subgroups defined according to language.

Comparison of Results of the TSA-E and the TSA-S
for the Mombasan Population

The Mombasan student population was the only one that was given both the TSA-E and TSA-S. Within this population 14 students reported that they spoke English natively. There were 257 students who reported that they were native speakers of Kiswahili. The remainder of the students in this population reported that neither English nor Kiswahili was their native language. A comparison of the results will show the levels of linguistic performance (as measured by the TSA-E and the TSA-S) attained by native and non-native speakers of the respective languages. In addition, this comparison will expose the influence of the school environment on the acquisition of the structures tested. The results reported here for comparison include only those categories which met the discriminatory criterion for either the English version or the Kiswahili version or both. There were 17 categories of structures for which this applied. The overall correct means for the tests (all categories included) were 71% on the Kiswahili test and 67% on the English test.

Results and Population Variables

All students. The discriminatory criterion applied to 17 out of the 20 structural categories on the TSA-E for the Mombasa population and to 10 out of the 18 categories on the TSA-S. Table 4-18 summarizes the results for these categories on each of the tests. The structural categories are

Table 4-18. Comparison of Mean Correct Responses for the TSA-E and TSA-S.

Structure	TSA-E % Cor	Rank	TSA-E % Cor	Rank
negation	(78)	2	70	9
ans env	(75)	3	68	11
determiner	72	4.5	(80)	6
Wh-words	72	4.5	(88)	2
reflexives	71	5.5	69	10
poss pro	71	5.5	(79)	7
rel pro/adv	70	8	67	13
inf/ger	69	9.5	67	14
conj	69	9.5	55	17
nomin	64	12	63	15
dis/alt	61	13.2	(90)	1
that-comp	61	13.2	(86)	3.5
verb seq	61	13.2	(86)	3.5
f/b pro	61	13.2	(81)	5
mv,lv,aux	61	13.2	56	16
rel comp	55	18	51	18
passive	49	20	64	14

Note: Only Mombasa students are included. N=429 for both tests.

ranked according to levels of correct responses for each test. Those scores which exceeded the 74% cutoff are enclosed in parentheses.

The information given in Table 4-18 shows that some of the structures that were relatively difficult for the students on the TSA-E were easy on the TSA-S. Disjunction and Alternation, That-Compliments, Verb Sequences in Conjoined Structures and Forward and Backward Pronominalizations were all equally difficulty for the students in English, but these same structures were among the easiest on the Kiswahili test and, in fact, had very high correct response rates (over 80% correct on each of these categories). Passive structures elicited a much lower percent correct score on the TSA-E (49%) than they did on the TSA-S (64%).

There were several categories where the mean percent correct was fairly close. These were the categories of Reflexives, Relative Pronouns and Adverbs, Infinitives and Gerunds, and Nominalization.

The categories that were more difficult in Kiswahili than in English (i.e., had lower mean correct scores) were Negation, Answer Environment, Conjunction, Main Verb, Linking Verb and Auxiliaries, and Relative Comprehension.

Comparison of school populations. When the scores on the two tests were compared across the two school populations (and consequently across sexes), there were notable differences between the Serani (male) and Mbaraki (female)

populations. The data given in Table 4-19 illustrates these differences. Here, only those categories which met the criterion on both tests for the general subject population were considered.

The overall percent correct scores on these eight categories of structures were roughly equivalent for the female group of students. With the exception of the categories of Passive and Conjunction, there was very little variation in the scores within each category across the two tests. Conjunctions for this group, were evidently easier on the TSA-E than they were on the TSA-S. The reverse was observed

Table 4-19. Comparison of the Mombasan School Populations on the Structures Meeting the Discriminatory Criterion on the TSA-E and TSA-S.

SCHOOL TEST	SERANI (Male) N=229		MBARAKI (Female) N=200	
	TSA-E	TSA-S	TSA-E	TSA-S
conj	66	50	73	60
mv,lv,aux	62	52	60	60
passive	50	60	46	70
reflexives	69	63	75	76
rel comp	54	48	55	54
rel pro/adv	68	61	71	73
inf/ger	67	62	72	73
nomin	63	58	66	68
Total	62	57	65	67

for Passive constructions. The score for Passive constructions on the TSA-S was higher than that on the TSA-E. The totaled mean scores across all of these categories were, indeed, quite similar (65% for the TSA-E and 67% for the TSA-S).

The male population did not exhibit anywhere near this consistency across the two tests. Firstly, the difference in the totaled correct means across the eight categories was considerable for the two tests: the scores on the English version being the higher of the two (the TSA-E = 62% correct and the TSA-S = 57% correct). Only on one structural category, the Passive, were the scores higher on the Kiswahili version of the test than on the English version. Secondly, the differences between the scores on the two tests were, in most cases, quite large, not like the one or two percentage point difference noted between the scores for the female population.

The biggest difference between these two groups of students was on the TSA-S. On this test, the Mbaraki students did much better than the Serani students. The total mean scores on these structures on the TSA-E were fairly close.

Comparison of age groups. The data for the eight categories which met the criterion were examined for differences in the performances on the two tests among the age groups in the student population. Table 4-20 summarizes the mean

Table 4-20. Comparison of the Age Groups within the Mombasan School Population on the Structures Meeting the Discriminatory Criterion on the TSA-E and TSA-S.

AGE TEST	11		12		13		14		15		16		17	
	E	S	E	S	E	S	E	S	E	S	E	S	E	S
conj	70	57	71	51	68	54	67	54	73	56	(79)	61	61	50
mv,lv,aux	55	56	55	57	55	57	63	56	67	54	64	56	62	50
passive	47	65	42	60	45	61	47	64	54	66	54	(75)	62	50
reflexives	(80)	(85)	64	65	70	62	70	68	(75)	70	(75)	(80)	67	56
rel comp	65	60	55	48	53	47	54	57	55	55	60	66	48	58
rel pro/adv	77	72	62	66	68	62	70	68	72	68	(76)	72	53	56
inf/ger	77	71	66	63	65	62	70	62	72	61	(75)	71	58	57
nomin	71	53	60	58	62	58	64	64	66	65	71	71	56	53
Total	68	65	59	59	61	58	63	62	67	62	69	69	58	54

percent correct scores for these categories. The TSA-E and TSA-S are identified in the table as E and S respectively.

Students of all ages had equal or slightly higher scores on the TSA-E than on the TSA-S across the eight categories of structures. However, as can be seen from the total averaged scores, the difference was rather small. The scores within each age group were very similar for both tests and were identical within the 12-year-old group and the 16-year-old group. There was no developmental trend noted to obtain consistently across these age groups.

In general, the students' performance on the TSA-E was equal to or superior to their performance on the TSA-S within each of the eight categories for the majority of students across the seven age groups. The group of 16-year-olds exceeded the test criterion on four of the eight categories on the TSA-E and only two out of the eight on the TSA-S.

There were some categories where the scores on the Kiswahili version were better than on the English version for some age groups. On the category of Main Verbs, Linking Verbs and Auxiliaries, the score was higher on the Kiswahili test for 11- to 13-year-olds. This pattern was reversed for the group of 14- to 17-year-olds who did better on the English version of the test for this structural category. A similar observation was made for the category of Reflexives. For this structure, the 11- and 12-year-olds did somewhat better on the TSA-S. Overall, students between the ages of

13- to 17-years-old did better on the TSA-E. The scores varied considerably between tests and across ages on the category of Relative Comprehension.

It was only on the category of Passive that the mean correct scores were greater on the TSA-S than on the TSA-E. This was true for every age group.

Comparison of standards. Whereas there was no improvement in the mean correct scores on either test across ages, there was improvement noted across standards on both tests. The mean percent correct scores for all categories of structures for the TSA-E was 54%, 68%, and 76% for Standards 6, 7, and 8 respectively. On the TSA-S the mean correct score for Standard 6 was 65%, 71% for Standard 7 and 78% for Standard 8. Table 4-21 summarizes the mean correct

Table 4-21. Comparison of Standards for the Mombasa School Population on the Structures Meeting the Discriminatory Criterion on the TSA-E and TSA-S.

	STANDARD 6		STANDARD 7		STANDARD 8	
	E	S	E	S	E	S
conj	57	49	71	54	(78)	60
mv,lv,aux	46	52	64	58	74	55
passive	32	57	55	63	60	72
reflexives	60	64	73	71	(80)	73
rel comp	45	46	58	48	65	57
rel pro/adv	60	40	71	68	(79)	73
inf/ger	58	61	72	66	(77)	(75)
nomin	52	56	65	63	(76)	72
Total	64	53	66	61	74	67

scores for each of the three standards by the eight categories that were shown to meet the criterion for both tests for the Mombasan population as a whole.

There was more of a difference between mean correct scores for the two tests within Standard 6 than there was within the other two standards. In addition, there was more improvement on the total scores for the TSA-E between Standards 7 and 8 than there was between Standards 6 and 7, where the total mean correct scores were very similar (Standard 6 = 64% correct; Standard 7 = 66% correct). The rate of improvement between each of the three standards was fairly consistent on the TSA-S. Standard 8 students achieved scores in excess of the maximum cutoff of 74% on five of the eight categories from the TSA-E (Conjunctions, Reflexives, Relative Pronouns and Adverbs, Infinitives and Gerunds and nominalization) but only on two of the categories from the TSA-S (Infinitives and Gerunds and Nominalization).

Standard 7 students had higher mean correct scores on five of the categories from the TSA-S (Main Verbs, Linking Verbs and Auxiliaries, Passives, Reflexives, Infinitives and Gerunds, and Nominalizations) than they did on these structures from the TSA-E. Only the score on Passives was consistently higher for the TSA-S across the three standards.

All standards demonstrated an improvement in scores for all categories with the exception of Standard 8 on the

category of Main Verbs, Linking Verbs and Auxiliaries from the TSA-S.

Comparison of language groups. Mean correct scores were established for the Mombasan population for each of the structural categories with respect to the five language groups. These scores are reported on Table 4-22. The categories reported are those which had scores meeting the criterion on at least one of the tests. As can be seen from the table, some language groups exceeded the 74% criterion on the TSA-E. The scores which exceeded the criterion are enclosed in parentheses.

Table 4-22. Comparison of Language Groups in the Mombasan School Population on the Structures Meeting the Discriminatory Criterion on the TSA-E and the TSA-S.

LANGUAGE TEST	SWH		ARB		AFR		ASN		ENG	
	E	S	E	S	E	S	E	S	E	S
conj	69	54	72	56	(82)	(82)	(86)	56	(82)	48
mv,lv,aux	61	57	63	51	(91)	60	(92)	54	(86)	43
passive	50	64	49	69	72	61	(76)	57	69	67
reflexives	72	67	77	77	(85)	68	(89)	75	(84)	64
rel comp	58	51	53	53	79	50	79	53	(75)	51
rel pro	70	66	70	67	(90)	72	(88)	66	(85)	56
inf/ger	69	68	73	68	(89)	68	(91)	67	(84)	58
nomin	66	63	63	65	(82)	63	(81)	52	(82)	62
Total	64	61	65	63	(84)	65	(85)	60	(81)	56

The mean correct scores on the TSA-E were better than those on the TSA-S for all language groups. This was especially true for those students who indicated they spoke an African (excluding Kiswahili) or Asian language natively or English. The scores on the two tests for the groups of native Kiswahili speakers and Arabic speakers were very close. The Kiswahili speaking students scored 64% correct on the TSA-E and 61% correct on the TSA-S. The Arabic speaking students scored 65% correct on the TSA-E and 63% correct on the TSA-S. A similarity in the performances of these two groups of students was noted for the overall results on the TSA-E and TSA-S reported in earlier sections of this chapter.

Passives structures were again easier, relatively speaking, on the TSA-S for each of the language groups except for the African and Asian groups. For these two groups Passive structures elicited higher correct responses rates on the TSA-E than on the TSA-S. The Asian language group exceeded the 74% cutoff score on Passives in English. This was the only category of structures on which the Kiswahili and Arabic groups scored better on the TSA-S than on the TSA-E.

Summarization of Comparative Results

In this section, the results of the TSA-E and TSA-S from the Mombasan population were compared. In addition to comparing the scores for each of the structural categories

on the tests for the Mombasa population as a whole, the scores were compared according to the variables of School, Age, Standard, and Language. It was not necessary to analyze the data by the variable Sex, since the two school populations in this sample were segregated by sex.

For the whole population, it was found that there was only a limited number of categories (8) that showed scores that corresponded to the discriminatory criterion on both tests. For most of the categories, the scores on the English version met the criterion. Only ten of the 18 categories on the TSA-S did so. In other words, the TSA-S was an easier test overall for the Mombasan students. But this was not the case for every category of structures, particularly those that met the criterion on both tests, nor was it the case when the data were analyzed according to the variables chosen.

There were five categories of structures that were more difficult on the TSA-S than on the TSA-E. These were Negation, Answer Environment, Conjunction, Main Verb, Linking Verb and Auxiliaries, and Relative Comprehension.

There were differences between the two school populations in this sample of students on the eight categories of structures that met the discriminatory criterion for both tests. A within group comparison of the two school populations revealed that the scores on the TSA-E and TSA-S were quite similar (in total number of categories as well as between categories) for the female population at Mbaraki.

The two categories where variation between the two tests was notable were Conjunctions and Passives. The mean correct score for the category of Conjunctions was higher on the English test than on the Kiswahili test. The opposite case obtained for Passives where the mean correct score was 46% correct on the TSA-E and 70% correct on the TSA-S.

The scores from the Serani students on these tests presented a very different picture. For the Serani (male) students, the overall score on the TSA-E (62% correct) was higher than that on the TSA-S (57% correct). With the single exception of Passives, the scores on the TSA-E were considerably higher than the scores on the TSA-S. As it was with the Mbaraki female students, Passives proved to be easier on the TSA-S than on the TSA-E for the Serani students.

When the data were analyzed by age groupings (Table 4-20), it was found that scores on the TSA-E were, in general, superior to those on the TSA-S for each age group. The one exception to this statement that was consistent across all of the age groups was with reference to the category Passives. Here too, the mean correct score for Passives was greater on the Kiswahili test than on the English one.

The developmental trend that was noted across standards for each test separately (see data on Tables 4-6 and 4-13) was not parallel for the two tests. The total mean scores on the eight categories of structures which met the

criterion were similar for students in Standards 6 and 7 (64% and 66% respectively) on the TSA-E. There was a substantial increase in the percent correct scores between these two standards and Standard 8, where the mean correct score jumped to 74%. A more gradual and consistent increase in the scores over standards was noted for the TSA-S. The respective scores for Standards 6, 7 and 8 were 53%, 61% and 67%.

The three categories Main Verbs, Linking Verbs and Auxiliaries, Reflexives, and Infinitives and Gerunds had higher scores on the Kiswahili test than on the English test at Standards 6 and 7, but lower scores at Standard 8. It was also at Standard 8 where five categories exhibited scores in excess of the cutoff score of 74% on the TSA-E whereas only one category on the TSA-S had a mean score higher than this figure (i.e., Infinitives and Gerunds).

The analysis of these data with respect to the five language groups resulted in similar findings. For all five language groups, the scores on the TSA-E were higher than those on the TSA-S. There was, however, less of a difference between the mean correct scores on the two tests within the Kiswahili and Arabic groups. The differences between the two tests were much greater for the remaining three language groups. For each of these groups (Other African, Asian, and English) the total mean correct for the eight categories of structures included in the analysis exceeded the 74% cutoff figure for the majority of

structural categories on the TSA-E. These groups did not exhibit such consistently high levels of performance on the TSA-S. The only category of structures on which the Kiswahili and Arabic speaking groups scored better on the TSA-S was that of Passives.

Since the group of Mombasan students showed, in general, significant within group differences on both language tests, this group will be the focus of concern in the following chapters wherein the attempt will be made to isolate those factors which may contribute to the variations noted.

CHAPTER V

MOMBASAN SCHOOL STUDENTS' USE OF STRATEGIES AND ITS RELATION TO LINGUISTIC AND ACADEMIC PERFORMANCE

If the results from the TSA-E reported in the previous chapter for the entire population of Kenyan school children had reflected consistencies across all sets of variables, then nothing further would need to be said of the data. It would merely suffice to say that, by and large, this population of Kenyan school children had attained levels of English proficiency advanced enough to meet the demands of the Kenyan educational curriculum.

Things, however, are rarely simple. The data showed that the results obtained for the whole population were not descriptive of particular subgroups within the population. The mean correct scores for the Nairobi school subjects indicated that the test was, for them, an easy one. The scores on the test on the majority of categories of structures exceeded the upper limit of the discriminatory range. The results for these students, in fact, compare quite favorably with the data from a sample of native English speaking American school children of similar ages (see Quigley et al., 1978 pp. 100-102).

The tests results for the Mombasa school population stood in sharp contrast to those obtained for the Nairobi population. For the majority of this population, the scores met the discriminatory criterion (i.e., they fell within the range of 40% to 74% correct). The same can be said for the TSA-S, even though the scores on this test were slightly higher overall. This finding suggests that within this population there exists a possible group of students who found many of the structures on the tests to be quite difficult.

In order to keep the horse before the cart, it is important that the variation within the Mombasa group of subjects be accounted for before any attempt is made to explain the differences in performance between the two school populations. It is entirely possible that whatever factors are found to account for the differences in performance within the Mombasa school group are those that can also explain the differences between the groups.

To account for performance differences within the Mombasa population, it is necessary to do two things. One is to identify those structures on the tests which contributed most to the error rates observed. The other is to identify those subjects whose errors contributed most to the low overall mean correct scores for the group. This chapter, then, is devoted to identifying those structures which evoked the highest error responses on the test and those individuals within the Mombasa group of subjects who

contributed most to this error rate. It is concerned as well with determining the sources of those errors.

Procedure for Error Identification and Analysis

It is the purpose of this chapter to look more closely at the performance of this population on certain of these structures which showed consistent and low correct scores. This investigation will address the following two related questions: (1) Do the errors show any particular patternings? (2) If so, are these error patterns confined to any particular subgroup of subjects?

Selection of Categories of Test Items

Because this study has included a large number of subjects and the tests themselves contain many items, it is neither desirable nor practical to conduct an item by item error analysis for each individual subject. Instead certain categories of structures and certain items within the categories will be selected. The following four criteria were established for selecting the categories of items to be included in the analysis.

First the structures must fall within the accepted discriminatory range of 40% to 74%. Second, the responses to the items within each of the selected categories should exhibit some variation from the mean correct score. Third, the formal properties of those structures should be similar across the two languages. Fourth, the structures should

allow for errors that can be accounted for in the same way independently of the specific structure being tested. Finally, the correct answers to the items must only be accounted for by grammatical knowledge.

The first two criteria were selected to insure that there would be enough variation in the responses so that subgroups of subjects could be identified. The third, insures that some cross-linguistic structural uniformity be maintained so that ease or difficulty in comprehending the various sentences cannot be attributed solely to language specific attributes of the structures. The fourth criterion was established to allow for the possibility that similar processing strategies were being employed to comprehend sentences which contain different structural properties. The final one eliminates those test items in which the subject can apply a non-grammatical strategy and come up with the correct grammatical response.

Four structural categories met these criteria on both the TSA-E and the TSA-S. These were the categories of PASSIVE, NOMINALIZATION, RELATIVE COMPREHENSION, and CONJUNCTION. The mean percent correct scores for each of these categories on both tests is given in Table 5-1. The analysis of these structural categories identified a total of ten items from the TSA-E and ten items from the TSA-S as meeting all of the above the criteria.

Table 5-1. Structural Categories on the TSA-E and TSA-S Meeting the Set Criteria for Inclusion in the Error Analysis.

STRUCTURE	TSA-E	TSA-S
passive	48.2	64.9
nomin	64.3	64.0
conjunction	69.0	54.9
rel comp	55.9	50.8

Determining Categories of Error Types

In developing the TSA, Quigley et al. (1978) included detractors (errors) which, if chosen, would indicate that subjects were employing some type of interpretive strategy to comprehend the structure being tested.

There are two kinds of errors on these tests which indicate that a subject is employing a comprehension strategy. One type of error that is found consistently among the items selected for analysis is attributable to a strategy which says: for any 'Noun + Verb + Noun' sequence consider the noun immediately preceding the verb to be the subject of the sentence. This strategy is seen in the examples of items and errors below. Example errors are indicated with an asterisk.

- 1.A Juma thanked the teacher and went home.
* The teacher went home.
- 1.B Mvulana ambaye alitazamwa na Asha alitupa mpira.
Mvulana amba- ye a- li - tazam - w - a na Asha
Boy REL - he he-PST- watch -PASS-FV by Asha

a - li - tup - a mpira.
 he- PST -throw-FV ball.

'The boy who was watched by Asha threw the ball'

* Asha alitupa mpira.
 Asha a - li - tup - a mpira.
 Asha she-PST - throw-FV ball.
 'Asha threw a ball.'

In the example from Kiswahili, the noun concordial prefix on the verbs (the /a-/) is a concord agreement for Noun Class 1 (i.e., animate and human nouns). Its grammatical function is to mark the subject of the sentence on the verb.

The second type of error involves the application of a strategy which permutes (or somehow reorders) the order of the noun phrases in a sentence without considering the functional significance of that permutation (i.e., that it can turn an active sentence into a passive one). This type of error indicates that the subject is identifying nouns in a sentence and constructing a meaning based either on some general or individual semantic notion. For example, the incorrect response to 2.A below would indicate that the subject had neither used a grammatical strategy (in which case the response would be 'the selling surprised mother') nor surface word order strategy (e.g. 'the goat surprised mother) but some semantic strategy which is related to the perceived meanings of the nouns and verb involved.

- 2.A The selling of the goat surprised mother.
 * Mother surprised the goat.

Example 2.B, shows the application of the same strategy in Kiswahili.

2.B. Baba alimwona msichana aliyemshukuru Juma.
 Baba a - li - mu - ona msichana
 Father he -PST -her-see girl

a - li - ye - mu- shukuru Juma.
 she-PST-REL -him- thank Juma.
 'Father saw the girl who thanked Juma.'

* Juma alimshukuru msichana.
 Juma a - li - mu - shukuru msichana.
 Juma he- PST-her- thank girl.
 'Juma thanked the girl.'

In the following section, the error data will be presented and analyzed in order to assess the prevalence of these types of errors in the data from the Mombasa school subjects.

Frequency Distribution of Errors Related to the Use of Strategies

Table 5.2 displays the response frequencies categorized by percentages of correct responses, responses that indicated a surface order sequencing (SOS) strategy (following examples 1A and 1B in the preceding section), those that indicated a non-sequencing semantic strategy (NSS) (cf. examples 2A and 2B above) and other error types not attributable to any of these response types. The response categories containing a dash indicate that that particular category of response was not available for the particular item.

The frequency distributions of error responses charted in Table 5-1 show that for these 20 items the total error rate was 43.6%. Approximately 85% of these errors was due to the application of a comprehension strategy.

Table 5-2. Response Frequencies to Specific Structural Categories Measured by the Use of Strategies.

Structure	Item	Test	Correct	SOS	NSS	Other
passive	80	TSA-E	24.9	65.7	9.4	-
	81		67.0	17.6	15.4	-
	84		54.5	28.5	17.0	-
	73	TSA-S	81.6	11.7	6.6	-
	76		67.2	19.6	13.2	-
	94		66.6	11.7	17.9	3.8
nomin	96		63.6	18.8	17.6	-
	102	TSA-E	51.7	15.6	16.3	16.4
	104		54.7	21.5	10.6	13.2
	108		44.6	27.6	16.7	11.1
	112		45.3	15.6	14.6	24.5
	93	TSA-S	36.5	45.9	-	17.6
rel comp	95		70.9	17.8	4.2	7.1
	103		46.1	-	46.4	7.5
	105	TSA-E	52.5	33.3	14.2	-
	101		48.1	20.0	15.3	16.6
	92	TSA-S	69.8	24.8	-	5.4
	101		65.0	4.6	20.2	10.2
conj	94	TSA-E	55.2	29.2	15.6	-
	87	TSA-S	61.8	27.9	10.3	-
Total			56.4	22.9	14.0	6.7

The SOS strategy was available for 19 of the 20 items included in the analysis. When this strategy was available it was selected by approximately 25% of the Mombasan students. The NSS strategy was available for 18 of the 20 items included in the analysis. It was selected by approximately 15% of the students.

These findings suggest that 40% of the subject population is employing a comprehensional strategy to understand the meaning of complex sentence structures in both English and Kiswahili. The use of strategies is not, therefore, restricted to the knowledge (or conversely the lack of knowledge) of a particular language. While the error rates associated with strategies are similar on the two language tests (37% TSA-S; 42% TSA-E) the distribution of errors between the two strategy types differs somewhat. The percentage of responses associated with the SOS strategy was approximately 20% on the TSA-S but 27% on the TSA-E. The percentage of subjects using the NSS strategy was more similar across the two tests. The error rate on the TSA-S for this strategy was 17% and 14% on the TSA-E.

Identification of Subgroups of Students in the Mombasa Population

The next question that follows from these data is whether the errors associated with the use of strategies are randomly distributed throughout the population or are they confined to an identifiable group of students? The

following procedure was employed to seek the answer to this question.

The error data for the twenty items included in the analysis were analyzed for each individual student in the Mombasa school population. Students who gave no responses to these particular items were excluded from the analysis. The subject population (that is, the subjects who made errors on the items in the structural categories given on Table 5-1), after this adjustment, totaled 410 for the TSA-E and 394 for the TSA-S.

The subjects chosen for analysis were further reduced to those who had an error rate of at least 60% (i.e. had incorrect responses to at least 4 out of the ten items on each test). These were the subjects who mirrored the error rates given in Table 5-2 in the preceding section. There were 260 subjects identified by this method.

The next step was to categorize the error responses by their distribution according to error types and group the subjects according to the prevalence of one response type over another. Individuals who had a response rate of 90% (e.g. 3 out of 4) for each of the categories of errors were included in a group. The complete data on these subjects is given in Appendix F.

By following this procedure, the subjects whose errors were randomly distributed across all of the categories of errors were excluded. This exclusion made it possible to

determine the existence of particular groups of subjects favoring specific error related comprehension strategies.

Results of the Analysis for Subject Subgroups

The results of the analysis are reported separately for the TSA-E and the TSA-S. After the results are presented, a comparison of the groups performances on each of the tests is made.

There were 74 subjects in the selected subgroup who consistently employed the SOS strategy in comprehending the four sentence structures examined on the TSA-E. These 74 subjects account for approximately 30% of the population who had an error rate of at least 40% on the ten items. Eighteen subjects were identified as using the NSS strategy. They account for roughly 10% of this population.

The error rates for the subject population overall would indicate that 128 students (30% of 410) chose the SOS strategy. This analysis has determined that 74 of those students (almost 60% of the predicted number) performed as a group, i.e. they used the strategy consistently at least 90% of the time.

The percentage of the population indicated as selecting the NSS strategy on the TSA-E was approximately 14%. This figure would suggest that 60 students out of the total population were using this strategy. There were 18 students identified from this analysis who exhibited error patterns which indicated the consistent use of this strategy. In

other words, of those students who chose errors attributable to the NSS strategy, one third of them used it consistently.

There were 174 subjects who exhibited an error rate of 40% or better on the TSA-S. Of these, a subgroup of 59 (approximately 15% of the total sampled population, N=394) employed the SOS strategy which accounted for 90% of the errors made by this group. There were 11 students who consistently used the NSS strategy in responding to the 10 items included from the TSA-S.

Approximately 40% of the errors that were made by these subjects are accounted for by the two strategies. The remainder of the errors were randomly distributed across the possible error types.

Comparison of Groups Across the Two Tests

The percentages of subjects who used either the SOS or the NSS strategies was consistent across the two tests--30% and 10% respectively. However, when individual subjects were identified in each of the groups on each of the tests, it was found that there was very little consistent overlap among the subjects.

None of the students who used the NSS strategy on the TSA-E were found to do so on the TSA-S. There were 17 subjects who consistently used the SOS strategy on both tests.

The data for these 59 subjects from the TSA-E were examined more closely. It was found that there were an

additional 17 subjects who showed a decided preference for opting to use the SOS strategy on these complex structures.

More will be said about these results in Chapter VI.

Summary of the Identification of Subgroups of Strategy Users

In summary, the overall error results (Table 5-2) would predict that the primary school children in the Mombasa population are of three distinct types with respect to their comprehension of English sentence structures. There is a group of 10% to 15% of the population whose knowledge of the language is limited to the identification and comprehension of major lexical items (i.e., nouns, verbs, adjectives). For these students any variation of a sentence that retains these lexical items is equivalent to any other arrangement of the same items (e.g., Juma saw mother = mother saw Juma = Juma was seen by mother). There is a second, somewhat more sophisticated group comprising 25% to 30% of the population for whom the sequential order of the major lexical items determines semantic equivalence. For these students "Juma saw mother" is equivalent to "Juma was seen by mother" but not equivalent to "mother saw Juma." Lastly, there is a group representing approximately 60% of the Mombasan student population which has acquired enough of the syntax and morphology of English and to be able to correctly comprehend the structural functions (e.g., subject, object, relative clause, nominalization, etc.) to employ this knowledge at least most of the time.

The same observation is to be made for the subjects with regard to their comprehension of Kiswahili. Although the error rates on the TSA-S were, overall, lower than those on the TSA-E, a proportionally similar percentage of the error responses was attributable to the two different types of comprehension strategies. Approximately 30% of the population employed the SOS strategy to understand complex sentences in Kiswahili. For this group of students, the order of the major lexical items (i.e., the content words) is functional in assigning a syntactic interpretation of sentences. A passive sentence such as 'Juma alitazamwa na Mama' is for these students an acceptable and equivalent paraphrase of the active sentence 'Juma alimtazama Mama'. A smaller percentage of students (approximately 10%) used the NSS strategy for comprehending complex sentences in Kiswahili. For these students, neither the syntactic (structural) properties of such sentences nor the order in which the major lexical items occurs is functional in the assignment of an interpretation. Rather, any pragmatically permissible order of major lexical items is acceptable. This group of students, for example, will accept either 'Juma alimtazama Mama' or 'Mama alimtazama Juma' to be actively stated paraphrases of the passive sentence 'Juma alitazamwa na Mama'.

This analysis indicates quite clearly that the error patterns are not accounted for by partial knowledge (and partial ignorance) across the whole population of subjects,

rather, different degrees of linguistic cognition and different stages of language acquisition being employed by distinct groups of subjects is being observed. It is possible, then, to speak of NSS and SOS level subjects rather than NSS and SOS type responses. The question that will be taken up in the subsequent chapter is now rather obvious: namely, given that NSS and SOS strategies are associated, in language acquisition, with very young children (essentially, two-year-olds to five-year-olds), what accounts for the presence of children still applying these linguistically immature strategies during the early ages of adolescence?

However, before this question is approached, further evidence confirming the existence and validity of these groups of students will be offered.

Further Evidence in Support of the Identification of Subgroups of Mombasan Students

The evidence supporting the preceding identification of subgroups of students comes from two independent sources. The first source of evidence is drawn from data collected from administering two experimental reading tests. The second source of evidence is obtained from students' test scores on the City Council Examinations (described in Chapter III).

In presenting this evidence comparisons will be made between the three identified subgroups of students on the reading measures and on the academic examinations. The

purpose of presenting this evidence goes beyond establishing the validity of the identification procedures and analyses used in determining the subgroups of students. Additionally, it includes an evaluation of the academic achievement of students from both the Nairobi and the Mombasa student populations.

It has been demonstrated by previous analyses that students who employ strategies relating to either the identification of major lexical items (NSS) or to the order of major lexical items (SOS) rather than employing knowledge of syntactic rules/properties exhibit relatively low rates of correct responses to complex linguistic structures on the TSA-E and TSA-S. From the data presented thus far (including those presented in Chapter IV), it would be expected that the outcome of this investigation would lead to the following two conclusions: (1) Students who employ strategies (SOS or NSS) in the comprehension of linguistic structures are not likely to do as well on tests measuring reading skills as those who do not, and (2) Students who employ strategies in the comprehension of linguistic structures are not likely to fair as well academically as those who do not. These two conclusions (or informal hypotheses if you will) assume a posteriori a relationship between students levels of performance on measures of linguistic (specifically complex syntactic) abilities and their attainment of academic skills. The results will tell whether these conclusions are in any way valid ones.

Measuring Reading Skills

Two experimental (non-standard) tests of reading were developed by myself and Dr. Robert Scholes, a member of my dissertation committee. The tests were developed to assess the Kenyan students' ability to recognize visually the shapes of words and to comprehend a written text.

The Word Recognition Test

The Word Recognition Test (WRT) contains words selected from reading word lists contained in the Kenyan English Syllabus. The words selected from the word lists were chosen because they were found frequently in the reading materials used in the classroom.

The WRT contained ten words. For each word on the test, there were three incorrect spellings and one correct spelling. The incorrect spellings were systematically incorrect. That is, they were incorrect because they had a letter deleted in the spelling, a letter metathesis, or they were spelled (misspelled) phonologically. The WRT was designed to indicate whether given errors could be attributed to visual recognition processes (i.e., deletions and metatheses) or oral based processes (i.e., phonological misspellings).

The WRT contained ten rows of words with four items in each row. Only one word in each row was spelled correctly. The other spellings were altered systematically and arranged

randomly within each row. An example of the word presentations is given below.

a) thrid b) tird c) thurd d) third

The first two spellings (a) and (b) represent visual type errors (metathesis and deletion errors respectively). Spelling (c) is a possible phonological misspelling of the word 'third'.

Students were asked to circle the correctly spelled word in each line. Before they were asked to complete the test, instructions were given orally and examples were presented. Students were allowed to ask questions for clarification at any time during the test. The test given to the students is reproduced in Appendix G.

The Reading Comprehension Test

The Reading Comprehension Test (RCT) presented the students with a short reading passage followed by ten Yes/No questions based on the passage. Care was taken in constructing the test to insure that all of the questions were based directly on the reading passage itself. This was done to insure that the students must have read and comprehended the passage in order for them to perform well on the test. The lexical and syntactic content of the reading passage and the forms of the questions reflected the same levels of complexity found in the students' classroom reading materials. The content of the passages was graded by class level for the Nairobi students. In other words, the content

of the passage reflected an increased difficulty in reading levels. This protocol was altered for the Mombasa school population. Only the test constructed for Standard 5 was given to these students. A comparison of the results, then, are not expected to yield equivalent results for the Nairobi and Mombasa populations. The results will be considered to be indicative rather than definitive.

The RCT contained a short reading passage followed by a set of ten questions. The following is an example of the test given to students in the lower primary grades in Nairobi. The tests upon which the results are based are given in full in Appendix H.

One day Jack and Tom gave Jill a big white cabbage. Jill said, "This cabbage will make me some nice soup." Jill went home then and cooked herself some soup. Then she made four cakes. She took the cakes to Jack and Tom's house. She gave each of them two cakes and went home.

A series of ten questions followed each of the passages. The students were asked to write their answer (yes or no) in the space provided next to each question. The questions were based directly on the passage itself. For example, some of the questions that pertained to the above passage were:

- Did Jill keep a cake?
- Did Jill make some soup for Jack and Tom?
- Did Jill give one cake to Tom?

Students were given instructions for the test orally. They were asked to read the "story" and then answer the questions with Yes or No. They were asked to write their responses out in full.

The WRT and RCT were administered concurrently during a regular reading period. The classroom period (about 45 minutes) allowed sufficient time for students to complete the tests.

Results from the WRT and RCT

Of the 162 students in the Mombasa population who were identified as being strategy users (in either English or Kiswahili or both) 154 were included in this analysis. Students who had been identified as using the ordering strategy (SOS) or using the strategy which identifies the major lexical items without regard to the order of those items (NSS) were treated as a single group in the analysis. Scores for the WRT and RCT were missing for eight of the students from the strategy sample arrived at from the analysis of the TSA-E and TSA-S. There were 231 students included in the group of non-strategy users.

The results from the WRT and RCT are reported in terms of percentages of correct responses. The errors on the WRT were analyzed according to the three types of errors (deletion, metathesis, and phonological misspelling) the test permitted. These results are summarized in Table 5-3.

From the rate of correct responses given in the above table, it can be seen that these two groupings of students do indeed perform differently on the two tests of reading skills. The non-strategy group (i.e. those students who had the highest correct response rates on the TSA-E and TSA-S)

Table 5-3. Performance of Strategy and Non-Strategy Users on a Word Recognition Test and a Reading Comprehension Test.

Student Group	WRT %	Del	% Errors Met	Phon	RCT %
	Correct				Correct
Non-Strategy (N=231)	90.2	30.7	25.5	43.7	80.2
Strategy (N=154)	80.0	27.5	35.1	37.3	60.5

performed better on both the WRT and RCT than did the students who were identified as being strategy users. The difference between these two groups was especially evident from the results of the RCT.

For the WRT the difference between the two groups amounted to only one more incorrect response on average for the strategy students than for the non-strategy group. The general error patterns for both groups was the same. The non-strategy group did, however, have a few more errors accounted for by phonological misspellings than did the strategy group.

Indication that these two groups of students perform differently on academically based language tasks (i.e., spelling and reading) was lent most support from the results of the RCT. Here the performance of the non-strategy group was much better than the strategy group. The non-strategy

group had a low rate of errors (20%) as opposed to the relatively high error rate evidenced by the strategy group (40%).

Comparison of Strategy and Non-Strategy Groups on
Measures of Academic Achievement

Scores from the externally administered City Council Examinations were averaged for the strategy group and non-strategy group within the Mombasa population. The same was done for the Nairobi school population for which there was no indication of the presence of students who rely on non-linguistic (i.e., non-syntactic) strategies in comprehending written language. The scores from the examinations included the following subject areas: English, Kiswahili, history, math and science.

The City Council Examinations (described in detail in Chapter III of this document) are used by teachers and school administrators in assessing students' academic achievement in all of the subject areas prescribed by the primary school syllabi. Although these examinations in and of themselves do not determine whether a student is promoted to the next highest standard in school, they do serve as accurate indicators of students' overall academic performance.

The examinations are written to assess the students' mastery of the various subject areas in the primary school curriculum. Since the content of the examinations is based on what is actually taught in the classroom, the tests are

good indicators of the levels of language proficiency required of students at each standard in school. A comparison of the scores from these exams for the Mombasan strategy and non-strategy users and for the Nairobi school students is given in Table 5-4.

The scores from the City Council Examinations when averaged for each of the three groups indicate quite clearly that the strategy using group is not as successful academically as are the non-strategy using, more linguistically mature groups. The more advanced language users (as determined from the analysis of the TSA-E and TSA-S) in

Table 5-4. Comparison of Scores on a City Council Examination for Mombasan Strategy and Non-Strategy Using Students and for Nairobi Students.

Student Group	School Subject					
		English	Kiswahili	History	Maths	Science
Nairobi		62.6	51.3	48.0	54.0	48.3
Mombasa						
Non-Strategy		60.1	60.1	51.1	47.4	52.5
Strategy		41.0	49.1	35.5	29.4	38.0

Note: A minimum score of 40% is required to pass a subject area on the test.

the Mombasa group compare favorably academically with their fellow primary school students in the Nairobi school.

These results are important for a number of reasons. First, they suggest that the differences that were noted between the two school populations from the results of the TSA-E are due largely to the existence of a large, less linguistically advanced population in the Mombasa sample and the absence of this population (to any significant extent) in the Nairobi sample. Second, a related suggestion is that the two schools are academically quite comparable. The non-strategy group of students in the Mombasa schools performs as well academically as do such students in the Nairobi school. Third, and finally, these noted differences in academic achievement indicate that students who have not yet attained more advanced competencies in English syntax and morphology (i.e. the strategy users) are less successful academically than those who have. This suggests the possibility of there being a specific linguistic etiology for failure to perform well in school. An attempt to describe the nature and character of this etiology is made in the following chapter.

Summary of the Relationship Between the Use of Strategies and Its Affect on Academic Achievement

From an analysis of the errors made by the Mombasan students on the TSA-E and TSA-S, it was possible to determine that two broad groupings of students was possible. One such grouping was based on the presence of the use of

strategies in comprehending complex sentence structures among some students in the Mombasa school population. The other grouping was based on the presence of the use of grammatical information for comprehending such sentence structures.

While the existence of these groups of students within the Mombasa sample was quite clear from the error patterns on the TSA-E and TSA-S, additional confirmation for these groups was sought. Two independent measures were used. One was an experimental reading test (the WRT and RCT), the other was comprised of the scores from the City Council Examination. The performance of the groups on these measures was very different. Students who do not rely on strategies in comprehending language do very well in comprehending a written text and succeed well academically. The conclusions (i.e. the informal hypotheses) which were presented earlier in this chapter were supported by these additional findings. These conclusions would predict lower level achievement in general for the strategy using group of students. From the results of this research it is possible to say, but only tentatively, that students who employ strategies in the comprehension of complex (written) language are students who

- do not have advanced knowledge of complex syntactic and morphological processes
- exhibit low level reading comprehension abilities
- are not successful academically

Given that the classification of these students into strategy and non-strategy using groups appears to be well motivated so far, I will proceed to look further to explain the linguistic abilities of these groups and attempt to characterize the factors which may contribute to the differences in performances between these two groups of students.

CHAPTER VI

ORDER AND INTENSIONALITY

The analyses of error patterns in the previous chapter indicated that different degrees of linguistic cognition and different stages of acquisition of linguistic forms were being observed within the Mombasa population of Kenyan subjects. These differences were revealed through an examination of the various types of error responses that occurred in the specific structural categories from the TSA-E and TSA-S. Two broad groups of subjects were distinguished. One group (the largest and most linguistically advanced) used appropriate syntactic information to understand complex sentences in both English and Kiswahili. The second group did not show evidence of using such information. Rather, this group relied on the use of one or two non-syntactic comprehension strategies that considers the semantic information given by the content words in the sentences (i.e. the nouns and verbs) and then relates that information in either an ordered or an unordered way. Additional evidence was brought to bear on the categorization of students according to the incidences of strategy usage. Evidence gathered from the administration of a reading test and that gathered from academic test scores

showed that these two groups performed as groups on these additional measures.

The analysis of the performance of these groups on the TSA-E and TSA-S determined additionally that the incidences of the use of these strategies (termed SOS and NSS in Chapter V) were not randomly distributed throughout the population. In fact, the analysis showed that within this second group of subjects there were two subgroups; one which consistently employed SOS and another which consistently employed NSS.

These results present an interesting and perplexing problem. The problem concerns the existence of a group of normal adolescent language users who employ strategies typically associated with impaired language users and young children. In the exposition to follow, various aspects of this problem will be explored in an attempt to establish an informed background from which this problem can be accurately and appropriately viewed.

Description of Order and Intensionality

In the previous chapter, the identified strategies were described as being either non-sequentially ordered or ordered. The term 'ordered' is used here in its normal sense; that is, to refer to structural information based on the sequential order of elements in sentences. An 'unordered' strategy would, then, be a strategy based on the unordered set of referential terms of a sentence. To

illustrate these two parsing strategies, given the sentence, 'the boy kissed the girl', an individual employing the NSS (unordered) strategy would base comprehension on the extensional terms 'boy', 'kiss', and 'girl.' For this individual, any pragmatically permissible order of the referential terms would be acceptable and equivalent. In other words, such a person would consider the sentences 'the girl kissed the boy,' 'the boy kissed the girl', and 'the girl was kissed by the boy' to be acceptable paraphrases of 'the boy was kissed by the girl'. Such equivalences were seen in the error rates of approximately 10% of the Mombasa school population.

However, for an individual employing the SOS, a paraphrase of a sentence which permutes the order of the noun phrases given by the trigger sentence would not be acceptable. For this individual, the surface order of the major sentence constituent, N + V + N for example, is utilized in the parsing algorithm. That is, any sentences that retain the original order of major constituents are equivalent for individuals using the SOS. For such persons, 'the boy kissed the girl' is an acceptable paraphrase of 'the boy was kissed by the girl', 'it's the boy that kissed the girl', etc.

It is only for the most linguistically advanced of the Kenyan subjects that the interpretive import of the derivational and inflectional elements of English/Kiswahili come into play. For these subjects the intensional terms by

means of which active and passive forms of sentences (and innumerable other structures) are distinguished are utilized. For these subjects, then, neither order nor reference form the primary or exclusive data for sentence comprehension.

The previous paragraphs have introduced a distinction which, although a well-known and quite elementary notion in such fields as mathematics and symbolic logic, has not attained any widespread familiarity in linguistics. The distinction is between extensional and intensional terms. This distinction is quite straightforward: Extensional terms are terms (of a language) which relate propositions to the real (external) world (the *Weltenschaung*). Intensional terms are terms (of a language) whose interpretations are functions and properties of the language itself. In the context of logic and mathematics extensional terms are also known as "Variables" and are often represented in majuscule, e.g., A, B, C, X, Y, Z. Intensional terms are those symbols which represent relationships among such variables, e.g., '=', '+', 'x', etc. Here, A, B, etc. refer to entities in the real world (unspecified, but nonetheless external to the particular notational system) while the interpretation of '=', '+', etc. is given by the system in which they function.

Natural languages also employ this dichotomy of elements. They have extensional terms (generally, the base or stem morphemes of nouns, verbs, adjectives, and adverbs,

although the dichotomy is not isomorphic with parts of speech) by means of which users of the language represent objects, events, and properties of the universe. The extensional terms are then related to each other and inflected by means of a complex system of intensional elements which have no meaning or reference whatever outside of the linguistic system in which they function. To illustrate the extensional/intensional dichotomy, the sentences below have been written with the extensional terms in capitals and the intensional terms in small case.

1. the BOY WATCHing the GIRL WALKs AWAY
2. the BOY WATCHes the GIRL WALK AWAY
3. the BOY being WATCHed by the GIRL WALKs AWAY
4. the BOY is being WATCHed by the GIRL WALKING AWAY

As is dramatically illustrated in sentences 1 through 4, an individual attempting to deal with the structures of these sentences without having a command of the syntactic import of the intensional morphology would be unable to distinguish among the several sets of relationships that obtain for the extensional referents. This inability to deal with intensionality is at the heart not only of the behavior seen in some of the Kenyan children but also of normal native language acquisition, the various disorders of language associated with sensory and neurological impairments or with specific learning disabilities, and in the linguistic competence of illiterate users of languages.

While the data and analyses here are, apparently, the first demonstration of the efficacy of order and intensionality in older, unimpaired language learners, these

factors are important and reasonably well-known aspects of linguistic competence in immature or impaired language users and have received some attention in linguistic theory.

In the following sections, the utility of order and intensionality in the various areas of interest that impinge on the present research will be surveyed in order to present a more global view of how these terms apply to language and to linguistic inquiry. Since the strategies described involve more than order the terms NSS and SOS need to be refined. In the subsequent sections, unordered and ordered extensional strategies (now UES and OES) will stand in opposition to intensional strategies (IS).

Order and Intensionality in Native English Language Acquisition

UES and OES are both well attested in native language acquisition, particularly in children acquiring English and other western languages. As Philip Dale notes,

Two of the major devices used by languages to indicate the syntactic structure of sentences are word order and inflections. . . . Virtually all studies of child language report that the child begins his language development by stringing words together without inflections. (Dale, 1972 pp. 50-51)

Dale's observation seems to imply that word order is functional as a parsing strategy in the earliest stages of language acquisition. However, the observation that children order words during the early stages of language acquisition does not in itself constitute evidence suggesting that this ordering carries with it any linguistically

functional import. In fact, in the earliest forms of multi-word utterances, or what is often called the Pivot + Open stage, occurring typically at 18 to 20 months of age, the two "parts of speech" may occur in any order. That is, for some pivot words such as 'allgone' and 'byebye' and open words 'mommy' and 'daddy', utterances like 'allgone daddy', 'allgone mommy', 'byebye mommy', 'byebye daddy', 'daddy byebye', 'mommy byebye', 'daddy allgone', 'mommy allgone' may all be observed. While the order of the pivot and open forms appears to be stable within individual children (Braine, 1963), it varies from child to child and is particularly free in utterances employing two open class words (e.g., 'make house', 'house make', 'car daddy', 'daddy car' (Bloom, 1970).

The ordered extensional strategy begins generally during the third year of native language acquisition and lasts at least until the beginnings of the acquisition of literacy (i.e., until the age of five). Four-year-olds generally employ sequential strategies in sentence comprehension. They interpret both active and passive forms of sentences as SVO (Turner and Rommetviet, 1967) when the NPs are reversible (e.g., when both NPs are animate). They apply the same strategy (SVO) to nominalized propositions such as 'man-eating lion' (Hall and Ramig, 1978) and they also take the most immediately preceding NP as subject in expressions such as 'John promised Bill to go.' For "double-object" sentences such as 'John fed her dog

biscuits', children at young ages employ a "soonest constituent boundary" strategy and take the first possible NP (here, 'her') as the indirect object and the remainder of the predicate (here, 'dog biscuits') as the direct object (Scholes and Klepper, 1982) even when the intensional morphology is contradictory to this interpretation (e.g. 'John fed her dog the biscuits').

While previous discussions of child language have expressed such sequential comprehension strategies in terms of the transformational rules presumed to be absent in the child's grammar (passivization, nominalization, dative movement), the behavior can also be accounted for by assuming an absence of intensionality. Without such capability, the child is left with no other way of assigning structure than to base parsing on some type of ordering. Compare, for example, the pairs of sentences below (relevant to the previous discussion):

1. Active vs. Passive
 - a. John hit Mary
 - b. John (was) hit (by) Mary
2. Nominalized
 - a. the man eating lion
 - b. the mean eating (a) lion
3. Dative/Accusative
 - a. . . . her (the) dog biscuits
 - b. . . . her dog (the) biscuits)

Although it has not received as much attention as considerations of the presence or absence of specific transformational syntactic rules in child grammar, there are some studies which directly relate to intensionality. Cazden (1968, cited in Dale, 1972 p. 53), for example, shows

that within inflectional morphology, extensional morphemes are acquired before intensional ones (both Cazden and Dale call extensional forms "concrete"). In a study of sentence imitation by four-year-olds, Scholes (1970) found that nearly 30% of all intensional morphemes were deleted in the children's repetitions and that this deletion was not altered when the intensional morphemes were replaced by nonsense syllables.

It appears, then, that for pre-literate children (aged five or less) the normal mode of sentence comprehension is the Ordered Extensional Strategy (OES). While intensional morphemes occur in their utterances, research on imitation and comprehension suggest that their presence is not functional. Children may utter passive (or nominalized or double-object) constructions and may include any number of intensional forms in their speech. Yet, the conclusion which can be drawn from the research to date is that such utterances are mere models of adult speech and that the syntactic functions of intensional forms is not part of the child's competence.

Order and Intensionality and Linguistic Description

Though order and intensionality as aspects of linguistic structure have not received a great deal of attention within linguistic theory, some linguists have employed these terms in grammatical descriptions.

James McCawley (1980; 1982) has criticized linguistics for combining sequential and structural data in a single (transformational) component of grammar. He points out, for example, that while verbal statements of the scope and purpose of transformations clearly entail structural relationships among various formulations of sentences, the actual rules used as exemplars of these relationships (e.g., the passive transformation) are in fact rules which specify the order of constituents.

Sequential ordering of elements, seen as a separate aspect of grammar from the structural properties of collocations of elements, is a feature of "Relational Grammar" (see Newmeyer, 1980 pp. 241-245, for a history and survey). Relational grammar claims such distinguished current adherents as Paul Postal and David Perlmutter and a direct descendency from no less a figure than Otto Jespersen.

Linguistic concern with intensionality is found in a variety of formulations of varying degrees of approximation to the way the concept is used here. Intensionality is a fundamental concept in the formulations of Montague Grammar as exposted by Barbara Hall Partee (1982). In Partee's theory (not really a grammar as it is essentially limited to the semantics of noun phrases) extensionality and intensionality are aspects of the truth value of propositions. Some propositions are, she points out, true or false by virtue of the extensional (real world reference) of the elements in the statement; for example, "John is riding a

unicorn" is false on extensional grounds. Other statements are true or false on intensional grounds; that is, the extensional references of the terms do not falsify or verify the statement; e.g., "John is dreaming that he is riding a unicorn." In Partee's usage, then, intensional terms may be whole phrases (which may contain extensional terms--e.g., 'dream'--but which are intensional as a whole).

The present conception of extensional and intensional terms is on a more morphological level, and, as such, finds its linguistic antecedents in such conceptions as content vs. function words and clitics vs. phonological words. The distinction between content and function words (also known as "contentives" and "functors," respectively) has been a traditional feature in describing the lexical aspects of grammars. In recent works, varying terminology has been employed for varying purposes (for example, contentives are called "major lexical items" in Chomsky and Halle, 1968, and functors are termed "syntactic formatives" in Scholes, 1982). The intended distinction, however, remains relatively clear and consistent throughout; namely, a distinction between morphemes which have language-external referents (extensional terms) and those which have language-internal functional referents (intensional terms). Where the present formulation departs somewhat from other conceptions is in its ignorance of a distinction between bound and free forms. For the purposes of capturing the facts of language acquisition and use, there does not appear

to be any motivation for distinguishing between intensional morphemes that occur (at least in print) as free-standing words (e.g., the infinitive marker 'to' or the definite article 'the' in English) and those which occur only as affixes (e.g., the infinitive marker 'ku-' or the animate object concord marker '-mu-' in Kiswahili). It is clearly not a morpheme's ability to occur in orthography with spaces before and after it that make it intensional (or extensional), but rather the source of its reference.

This statement, when applied for example to a Bantu language such as Kiswahili, which has a very rich and productive system of morphological affixation, may have some rather extreme consequences for the construction of language typologies. It is, however, far beyond the scope of this present work to explore these consequences in any detail. Though, in light of the discussion that follows, which directly relates the attainment of literacy to the comprehension of intensional forms, I think it is important here to clarify this point in order to hopefully avoid any confusion over the nature of the claims I will make.

The assignment of an intensional or extensional interpretation of a specific morphological form is, I believe, not a fact of a language but a fact of language use. There is nothing inherent in the word 'and', for example, which makes it either intensional or extensional. In fact, given the formulation of intensionality and extensionality presented so far, 'and' can be interpreted either way depending

of course on its source of reference. In the compound sentence 'Mary went to the store and Jane fixed lunch' the morpheme 'and' functions extensionally. That is, it refers specifically to what Jane did. What Jane did is a fact of the world. However, in the sentence 'The boys and girls played in the yard', 'and' refers intensionally to the fact that an identical verb phrase, 'played in the yard', has been deleted.

Intensionality and extensionality are not terms that I intend to be applied to language typologies but rather to typologies of language users. This point will be discussed further in Chapter VIII with particular reference to intensional and extensional interpretations of grammatical morphemes (such as the passive /-w-/ morpheme in Kiswahili).

Intensionality and extensionality have received considerable attention in linguistics in the context of phonology. Jacobs and Rosenbaum (1968) posited a grammar in which grammatical morphemes (the present intensional morphemes) were distinguished from major lexical items (extensional morphemes) on the basis of underlying phonological representations. Intensional morphemes, they showed, had no stored underlying phonological representation but were generated directly from functional data. The definite article, for example, would appear in a structural description as a matrix of grammatical features, for example as [Definite Article], and this material would be phoneticized directly by the phonological rules of the language. Extensional

morphemes, on the other hand, are phonologically represented in the underlying storage of linguistic data.

The Jacobs and Rosenbaum conception is entirely consistent with linguistic behavior. Extensional morphemes are subject to phonemic paraphasias in aphasics (i.e., the production of nonsense forms as in "I had a wednebbly on my falderbill") and are freely available for phonemic distortions by unimpaired language users (e.g., in games such as Pig Latin and Ubbly Dubby and in the fanciful prose of Dr. Suess) and in 'slip-of-the-tongue' phenomena. Intensional morphemes, conversely, never occur as phonemic paraphasias in aphasic behavior nor are they subjected to phonemic distortions in other language users (note the non-occurrence of any Sussian expressions as "Gluth man walkflik mer gluth store"). Intensional morphemes, both clitics (bound) and free forms, are not subject to the same types of phonological manipulations and distortions as extensional morphemes, suggesting that Jacobs and Rosenbaum's formulation is at least consistent with observations of linguistic performance (see also Kean's (1979) proposal for a phonologically based theory of agrammatism). There has been, to my knowledge, no reported research on which morphological elements in Kiswahili are subject to phonemic manipulation or paraphasia in speech, though such information would be of much interest to linguistics.

Intensionality and Literacy

Most directly relevant to the concerns of this present work are the results of recent studies which indicate a strong link between literacy and intensionality. In the context of the work on the metalinguistic performance of illiterate native speakers of English, intensionality is seen to be related to literacy not just in the morphological domain, but is also the underlying aspect of phonemic, syntactic, and general cognitive limitations of the non-reader. It is within this context that an explanation of the data from the Mombasan school students will be sought.

In general, linguists have not been concerned with the possible effects of literacy on linguistic competence--its acquisition or its breakdown. Studies of children acquiring language (e.g. Palermo and Molphese, 1972) have not considered the role played by the attainment of reading skills and literacy in the process of language acquisition. The same can be said for investigations of neurologically based language impairments (e.g. Kean, 1985) which do not consider the possible implications of pre-trauma literacy (see, however, Lecours, 1987). Further, the bulk of research in psycholinguistics has been concerned exclusively with the performance of literate subjects as in, for example, investigations of the psychological reality of phonemes (Fry, 1964; Lieberman et al., 1957) and various aspects of

transformational grammars (e.g. Slobin, 1971; Taylor, 1976; McNeil, 1987; and many others).

Where the acquisition of reading skills has been considered in relation to developing linguistic competence, it has generally been assumed that poor reading results from delayed or aberrant oral language acquisition (e.g., Bond et al., 1984; Hall and Ramig, 1978; Vogel, 1975). Few, if any, reading specialists appear to have considered the possibility that failure in learning to read may have a limiting affect on the acquisition of oral language (see, however, Ehri, 1975).

Recent work on language acquisition and competence in the absence of literacy, to the contrary, strongly suggests that the attainment and possession of reading skills cannot be ignored in serious attempts to formulate descriptions of the linguistic knowledge of language users or the acquisition of that knowledge.

Accruing evidence suggests that phonemic knowledge (as assessed by phoneme deletion tasks where subjects are asked to report the results of deleting a sound from a word, e.g. deleting the sound r from 'grow') is different for literate and illiterate (or pre-literate) individuals. Pre-literate children, for example, cannot isolate and manipulate individual phonemes, to produce the answer 'go' for the task given in the preceding example. Neither older children who read non-alphabetic orthographies (Read et al., 1986) nor

illiterate adult native speakers of English are able to do such tasks (see relevant work reviewed in Bertleson, 1986).

Phonemes are intensional. Phonemic knowledge is, therefore, intensional knowledge. Dividing the continuum of speech into discrete sub-lexical, sub-syllabic units involves using mental constructs which have no reality in the physical world. The meaning of any phoneme is its function in the phonemic system in which it obtains, i.e. its meaning is intensional.

In a recent study of the morphological knowledge of illiterate adult native speakers of English it was found that these subjects could not identify morphological segments in polymorphemic units (Scholes and Willis, 1987a; 1987b). Subjects were asked to "find the smaller word inside the words" 'misspelling', 'rewriting', 'reaction', 'discovery', and 'uncertainty'. Only four of the 21 subjects were able to get at least three of the five correct. By way of contrast, this same task was performed perfectly by third and fifth grade children who could read at grade level.

Further investigation of syntactic comprehension of spoken sentences by these illiterate adult subjects showed that there are syntactic rules which are properly in the grammars of literate users of English that are not part of the syntactic component of the grammars of illiterates. A sample of seven of the questions asked of these subjects,

along with the most frequently given answer for each is given in Table 6-1.

When illiterates are faced with comprehending such complex structures as passives (2), embedded clauses (3), nominalized propositions (4 and 5), or verbs such as 'promise' (7) which take sentential objects rather than noun-phrase objects they tend to misinterpret the subject-verb relationships. Instead of using the syntactic rules of adult literate grammars, illiterates tend to employ a comprehensional strategy which asserts that the noun

Table 6-1. Responses Given to Various Sentence Structures by Illiterate Adult Native Speakers of English.

TRIGGER SENTENCE	RESPONSE
1. If Mary pushes John, who does the pushing?	Mary
2. If it's Mary who is pushed by John who does the pushing?	Mary
3. If a girl watching a man drawing pictures of a young boy runs away, who runs away?	Boy
4. What does a man-eating lion eat?	Lions
5. What does a lion-chasing tiger chase?	Tigers
6. If John tells Bill to go away, who goes away?	Bill
7. If John promises Bill to go away, who goes away?	Bill

phrase immediately preceding a verb is the subject of that verb. Structures which adhere to this pattern (as in 1 and 6) are correctly understood, while those that do not follow this pattern (where the subject follows the verb or where the subject precedes it but there are intervening noun phrases) are interpreted differently by non-readers than by readers. This is precisely the interpretation given to such complex syntactic forms on the TSA-E and TSA-S by the identified subgroup of students in the Mombasa school population (consult information given in Table 5-2).

These studies indicate that literate and illiterate native speakers of English employ very distinct conceptualizations of their language. While literates show a knowledge of the language which employs phonemic and morphemic components and a non-linear (i.e., transformational) syntax, illiterates show a knowledge of gestalt lexical elements (words) and a syntax based on linearity (adjacency and sequence). These grammatical distinctions appear to be but one aspect of a more general difference between the two groups of speakers. The difference is made clear by the distinction made between extensionality and intensionality.

Consider the morphology first. Illiterate adult native speakers of English do not, by and large, analyze complex words into their constituent morphemes. This limitation may be captured in the observation that illiterates do not process intensional terms. The affixes appended to stems in

'misspelling', 'rewriting', 'reaction,' 'discovery', and 'uncertainty' are intensional. The suffixes '-ing', '-ion', '-y', and '-ty' are purely intentional in that their meaning is 'this word is a noun' (i.e., there is no object, event, state, or property of the universe outside of English that is an 'ing' or a 'ty'). Similarly, the prefixes 'mis-', 'dis-', 'un-' and 're-' are largely intensional in that their meanings are functions such as 'it is not the case that' and 'iteration.' If illiterates do not deal with intensionality, then they have no way of identifying and comprehending the intensional affixes in these words and, consequently, no way of separating them from the extensional stems to which they are attached.

The same characterization can be applied to explain the illiterate's syntax. The derivational history of the structure of sentences is overtly marked by intensional morphemes. Without the ability to process these intensional markers of derivations, there is no way to distinguish between such pairs of sentences as:

What does a man-eating lion eat?
 What does a man eating a lion eat?

The boy watching the girl runs away.
 The boy watches the girl running away.

In the absence of the ability to comprehend the functional import of the intensional morphemes, the illiterate adult (like the pre-literate child) applies a sequential strategy yielding identical structures for each member of these pairs.

The error data from the TSA-S and TSA-E for the Mombasa students suggest that a similar lack of intensional knowledge is responsible for the high error rate (35%) on such sentences as:

Mvulana ambaye alitazamwa na Asha alitupa mpira.
'The boy who was watched by Asha threw the ball.'

Wherein the noun concord marking ('a-') on the second verb ('-tupa) must be interpreted intensionally as 'subject' in order to be interpreted correctly. Without such knowledge, subjects employed a sequential strategy and responded with the intensionally incorrect (but extensionally correct) answer "Asha alitupa mpira" (Asha threw the ball).

In addition to the extensional grammar which represents the linguistic abilities of illiterates, the absence of intensional logic and reasoning shows up in various other limitations. Adult illiterates cannot recognize sentences as being well- or ill-formed by virtue of usage of intensional morphemes, but instead will accept or reject sentences on the basis of purely pragmatic properties. They will say, for example, that 'John hit Mary' is a bad sentence because John shouldn't do that and that 'John be give flowers to Mary' is a good sentence because that's a nice thing for John to do. They cannot perform tasks which require the use of analogy. For example, in a test paradigm like, "If you speak today and you did the same thing yesterday, then yesterday you spoke. If you drive today and you did the same thing yesterday, then what did you do yesterday" illiterates are liable to respond with answers like,

"Well, I watched TV and then I went to the store" (Scholes and Willis, 1987a; 1987b). In a more general cognitive context, they appear unable to classify things on the basis of geometrical categories or other abstract properties (Luria, 1976; Nickerson, 1986).

Intensionality as a Unifying Explanation for Different Types of Linguistic Competence

Positing that the adult illiterate is unable to deal with intensionality, then, provides a reasonable and unifying explanation of both morphological and syntactic behavior in terms of a linguistic competence that lacks intensional components and processing. The distinction between the grammars of literate and illiterate language users, which would otherwise require a list of components and processes describing phonological, morphological, and syntactic differences between readers and non-readers, can be expressed much more succinctly: the linguistic knowledge of literates employs both extensional and intensional terms while the linguistic knowledge of illiterates is limited to extensional terms.

Given the maturational data and the relative frequencies and degrees of linguistic debilitation associated with extensional and intensional competencies, it would be appropriate to propose a hierarchy of competencies as:

- I. EXTENSIONAL GRAMMAR
 - A. UNORDERED
 - B. ORDERED
- II. INTENSIONAL GRAMMAR

Of particular interest in the context of the linguistic abilities of the group of Mombasan students who consistently employed strategies in comprehending complex structures on the TSA-E and TSA-S is the finding that suggest that language acquisition does not generally progress beyond stage I.B (Extensional Ordered Grammar) in the absence of literacy. This observation raises the possibility that the documented differences in linguistic performance between the Mombasa and Nairobi school groups as well as those within the Mombasa population itself is a function of literacy attainment. This possibility will be investigated carefully in Chapter VII.

The finding that mature language users do not uniformly exhibit the same levels of grammatical competency calls into question the view that the acquisition of grammar itself is a single-step function. Moreover, the notion that there is only one most highly valued grammar which a child acquiring language comes to construct is, at the same time, open to review.

James McCawley's (1982) criticism of Chomsky's formulation of a 'Language Acquisition Device' raised precisely these questions. Since it is fundamental to the view of the relationship between literacy and language proposed here, the relevant passage in McCawley is quoted at some length. Speaking of Chomsky's formulation of language acquisition, schematized as:



McCawley writes (1982 pp. 80-81),

The language acquisition device is to incorporate an "evaluation measure" which allows determination of the relative cost of alternative grammars, and the grammar acquired by the child is to be the "least costly" grammar consistent with the set of "primary linguistic data" on which the learner basis his learning. . . . Any attempt to modify this account so as to take developmental stages into account destroys the foundation of the rationalization. At the very least, a theory of language acquisition must recognize that at every stage of his development the child has some grammar, that he does not keep a complete record of the linguistic data that he has thus far interpreted, and that accordingly the steps in the development of his linguistic competence cannot consist of his constructing a grammar from scratch to conform to a large corpus of linguistic data but must rather consist in modification of an existing grammar to make it conform to a fragmentary set of "new" data. The closest thing to an evaluation measure that would make sense in such a scheme of language acquisition would not be a measure of the complexity of entire grammars but a measure of the cost of revisions in an existing grammar.



But there there would be no reason to expect that the ultimate outcome of language acquisition would be "optimal" or "least costly" relative to any standard of "cost," since there would be no reason to expect the learning to involve revisions of the current grammar any more sweeping than what was needed to accommodate the data to which the grammar is to be extended.

It would appear that the introduction of reading to a child already quite competent to deal with oral language constitutes just such a case as McCawley envisions. The written form of the language is, here, the new data, and the

child's grammar is modified in just the ways necessary in order for the older grammar (adequate for speech and hearing) to adapt to the accommodation of the new form of language. The new data (i.e., the differences between oral and written language) include such facts as:

- (a) that structures do not have to be dealt with sequentially (visual scanning, unlike hearing, is not sequentially constrained);
- (b) that linguistic shapes do not decay over time (one can look at the linguistic data as long as one likes);
- (c) that various types of linguistic units (words, sentences, etc.) are bounded; and
- (d) that for some but not all languages, linguistic forms can be represented as strings of otherwise meaningless symbols called letters.

Such new data, successfully acquired and accommodated into a revised grammar, form the basis for the extensional and intensional dichotomization of illiterate and literate language users.

What is of concern in the present context is the failure of many of the Mombasa children to incorporate the new (written English/Kiswahili) data into their grammars. The question to be addressed, given this "McCawleyian" view of language acquisition is whether the failure for this subgroup of Mombasan children to develop an intensional grammar is due to some limitation in their ability to modify their grammars to accommodate these new facts, or, perhaps, a feature of the primary data themselves which could be due, for example, to possible linguistic limitations of the teachers or to a less than fully literate presentation of

the written language(s). These possibilities and others will be more fully elaborated in the next chapter.

CHAPTER VII

THE ATTAINMENT OF LITERACY AS A FACTOR WHICH INFLUENCES THE ACQUISITION OF LINGUISTIC COMPETENCE OF KENYAN PRIMARY SCHOOL STUDENTS

The data collected from administering the TSA-E and TSA-S have shown that all of the Kenyan students in the sample possess the ability to comprehend linguistic structures based on what have been identified as 'oral' processing strategies (principally OES). That is, all of these students have competencies that are accounted for by a Level I Extensional Grammar. Additionally, most of these students (almost all of the Nairobi school population and the majority of the Mombasa school population) have the linguistic competence given by a Level II Intensional Grammar.

In the previous chapter, it was suggested that what contributes to the ability to progress from a Level I Extensional Grammar to a Level II Intensional Grammar is the ability to process linguistic data represented in a non-sequential form. This form of representation allows the language user to "view" language data represented in a relatively permanent display and to view those data in left-to-right or right-to-left direction, or any other

direction he wishes. In other words, the language user is freed from the sequential constraints that are imposed on him when he processes language represented orally.

Given this representation of the data and of their consequence to language acquisition, the intensional morphology, previously assigned to adjacent extensional terms (for complex lexical items) by the Level I Extensional Grammar and essentially ignored in the interpretation of syntactic structures, takes on its literate grammatical function of assigning material to such constituents as subject, object, and embedded clause.

Such intensional affixes as '-ing' and 're-', which have been shown to be indivisible parts of lexical items in words such as 'rewriting' in illiterate users of English become, among literates, intensional morphemes which can be separated from the extensional stem. Such intensionally distinguished structures as:

The boy watching the girl runs away.
The boy watches the girl running away.

Regarded as indistinguishable by illiterates, take on their intensionally distinguished meanings in literate users of English.

These facts concerning the availability and unavailability of intensional morphology in literacy and illiteracy have been established for native speakers of English. The research to date would suggest that any user of English who succeeds in learning to read would show Level II grammars having the characteristics just briefly described. However,

the performance levels observed in the Kenyan population suggest that the affect of reading on grammar may not be a simple single step function. The data from the Mombasa sample suggest that there are at least three levels of grammar being employed, namely, Level II (literate) and two types of Level I (OES and UES). The distinction between OES and UES has been reported in the previous chapter. Here in this chapter, the possible sources of variation (with respect to literacy) within the subject population as they relate to Level I and Level II competencies are considered.

Identifying the Sources of Variation Related to Literacy Attainment

Explanations of the etiology of the failure of a sizeable subgroup of students within the Mombasa population to modify their grammar to accommodate literate (i.e., intensional) facts can be sought either in terms of organic limitations of the students' abilities or in terms of external social and educational limitations. That is, an explanation of the sources of the observed differences in performance within the Kenyan population can be attributed to either one of the following assumptions.

- I. That literate forms of representation (i.e. representations that make intensional facts of language accessible) of language are available to the same extent to all of the subjects, but that some subjects are unable to either acquire, learn, or notice these (intensional) facts.

- II. That all of the subjects are able to either acquire, learn, or notice these (intensional) facts, but that not all subjects have been adequately exposed to them.

Evidence supporting or contradicting either of these assumptions is presented in the following sections.

Assumption I

The assumption that some subgroup of the Kenyan subjects is unable to acquire the intensional facts of language is an unsupportable and highly unlikely one. This assumption implies the presence of some genetic, congenital or developmentally acquired disability or neurologic impairment in the Mombasa sample.

It is the case that comprehension (and production) of intensional terms is impaired in individuals who are learning disabled (cf., Menyuk & Looney, 1972; Rosenthal, 1970; Semel & Wiig, 1975; Wiig & Roach, 1975, also reviewed in Mercer, 1983 pp. 249-257), who have low I.Q. (Turner, 1977), who are congenitally deaf or severely hearing-impaired (Russell, Quigley & Power, 1976; Scholes, Brumfield, & Cohen, 1978; Schlesinger, 1971) or who are neurologically impaired, i.e. agrammatic or paragrammatic aphasic (Goodglass, 1976; Saffran, Schwartz & Marin, 1980; Heilman & Scholes, 1976; Zurif, Caramazza & Myerson, 1972; also discussed in Scholes, 1982 and Scholes & Willis, 1984).

This etiology is not relevant to the present research on two accounts. First, over the nine months in which my research was conducted, I had the opportunity to observe and

interact extensively with these students. Nothing in the behaviors of these students caused me to suspect the presence of impairments of any of the types mentioned above to any significant degree in either of the two populations. Second, I did not administer any type of test (e.g., hearing tests, I.Q. tests, etc.) which would be needed to confirm such an assumption.

Furthermore, this assumption is unlikely due to the presence of a subgroup of subjects only in Mombasa who exhibit Level I Extensional Grammar competencies. The fact that such a subgroup of subjects was not identified in the Nairobi population (to any large or significant degree) indicates that the incidence rate for this type of linguistic behavior is more likely to be attributable to environmental factors rather than to organic ones. This possibility is explored next.

Assumption II

More accessible, then, to a determination of the sources of variance within the Mombasan population (and perhaps between the Mombasa and Nairobi populations) is an accounting of the possible environmental factors that may differentially affect the students accessibility to the language data which promotes the development of Level II Intensional Grammar. For such an accounting, it will be necessary to isolate and distinguish those factors which contribute to literacy (and hence a Level II Intensional

Grammar) from those which contribute to general oral language development (i.e. development of a Level I Extensional Grammar). This determination requires a more elaborate description of the language environments of the populations in question than what has been here-to-fore presented.

Since I have hypothesized that the observed differences in the language abilities of the Kenyan students is due to literacy (the ability to deal with language in a visual/abstract form) and not to oral language development per se, I feel obliged to rule out (or at least call into question) the possibility that these differences are, in fact, due to variations in oral language acquisition. I should be able to show that the subgroup of Mombasan students who exhibit only oral language proficiency do so because they are not literate and not because they don't know either oral English or oral Kiswahili.

Before proceeding, however, I would like to insert a few words to clarify what it is I mean by 'oral' and 'literate' language development. In drawing a distinction between oral language and literate language, I do not mean to imply that the languages themselves are either oral or literate. Rather, the distinction I am making is based on how the languages in question are used, i.e., orally (extensionally) or literately (intensionally). I will return to this point at length in Chapter VIII.

The influence of oral language in the schools. With a few (minor) exceptions, students from both school

populations enter school from non-native English speaking backgrounds. For the majority of students in both locations, English is a second language. English medium instruction is introduced in both the Nairobi and Mombasa schools from the earliest grades. The teachers at both schools were observed to be equally fluent in the language overall. Within each school, though, some teachers appeared to have a better expressive command of the language than others. However, any influence of a particular teacher is likely to be overridden by others more or less fluent and expressive with whom the child comes into contact during the course of her education.

The content of the curriculum (i.e. the subjects taught) and the curricular time-tables for both schools are identical. This would suggest that both populations are exposed to the same amount of English and the same levels (in terms of content vocabulary) of English during the course of a school day.

From the stand-point of the language exposure in school, it would be expected that the two groups would have, minimally, the same knowledge of English. This, in fact, is not the case. As the test results indicated (Chapter IV, Tables 4-5 and 4-6), the performance of the Nairobi group was superior to the Mombasa group. Since the students in both the schools have been exposed to roughly the same oral language environment in school, it must be the case that the

differences are due to something other than the oral language environment in the two schools.

The influence of oral language in the home/extra-curricular environment. In earlier chapters (II and III) I have described in a very general way the language situation for Kenya and for the two school populations. The citizenry of Nairobi is extremely heterogeneous ethnically and linguistically. However, within this crazy-quilt of languages and cultures, English emerges as the dominant and preferred language for some people in some communities. Where members of a community (a neighborhood, for example) do not share the same source language, or where members of a family do not do so, English is spoken if these members are educated and are members of the upper middle class, e.g., government and school employees, employees or owners of international businesses, etc., many of whom happen to be non-African.

The Nairobi school (OLM) not only uses English as a medium for education but is itself embedded in a community in which English is widely spoken. Most of the students who attend OLM live in the nearby largely middle class suburban neighborhoods of South B and South C. These neighborhoods are multi-ethnic and multi-lingual ones. Being so constituted, neighbors are not likely to be able to communicate with one another in a common native language and so rely on either of the available common lingua francas, English or Swahili. Most residents, being educated and affluent and interpooled with non-Africans use English.

While all students attending OLM may not necessarily return home to a household in which English is frequently spoken (though many do) they will be exposed to English outside of school in a number of different settings, for example, on the bus travelling to and from school, with neighbors, in certain neighborhood shops, etc. They will probably encounter English too through exposure to such media as the radio, television, VCR's, etc. Knowledge of English then is likely to be supported through much extra-curricular interaction.

The Mombasa schools, though they use English as the instructional medium, are not embedded in an English speaking environment. Mombasa Town itself is decidedly ethnically Swahili. The Mombasa school children in my sample come either from Mombasa Town or from the more rural outlying areas nearby. The Mombasa population, though linguistically and ethnically more homogeneous than the Nairobi population, is more socially heterogeneous. The students come from a wide variety of social backgrounds; many from affluent and educated ones and many from poor and uneducated ones. Even if a student comes from an educated home, he is likely to hear and use Kiswahili in his interactions with his peers both in and out of school and with adult members of his community. The use of English, in the Mombasan context, is more highly restricted to the school and the academic environment.

From these observations of the larger oral language environments of the two school populations, it should be the case that the Nairobi school children should perform better on a test measuring English abilities than the Mombasa school children. The data from the TSA-E do, in fact, confirm this.

Yet, from this same set of observations it should also be the case that the Mombasa school children should perform better on a test measuring Kiswahili abilities than on a test measuring English abilities (assuming that there are no substantive differences in the structural functions of the morphology themselves). This should be so particularly for native speaking Kiswahili children. The data comparing performance on the TSA-E and TSA-S (see Chapter IV, Tables 4-18 and 4-19) confirmed this prediction up to a point. In fact, what resulted from this comparison was that while performance on the TSA-S was better than that on the TSA-E for native Kiswahili speaking students for some structures (i.e., possessive pronouns, determiners, forward and backward pronominalization, Wh- questions, and verb sequences), it was not better for all structures. In particular, for those structures which require that non-sequential (i.e. intensional) processing strategy be employed in comprehension, the results from both language tests were quite similar. These results for only native speaking Kiswahili students in Mombasa are summarized from Table 4-19 in Table 7-1.

Table 7-1. Comparison of Results of the TSA-E and TSA-S on Non-Sequenced Structures for Native Kiswahili Speaking Students.

TEST STRUCTURE	TSA-E	TSA-S
Nominalization	66	63
Relative Comp.	58	51
Passive	50	64
Conjunction	69	54

Note: Table includes information from Mombasa student population only.

Thus, in light of these data, I believe that a consideration of the speech environment alone does not account for the results that were obtained in this study. All of the Mombasa students have been exposed to spoken English and to spoken Kiswahili. For the most part, all of these students have constructed a Level IB Extensional Grammar (a grammar which consists of extensional elements and ordering rules) for each of these languages. Yet, only some of them have acquired a Level II Intensional Grammar in English and in Kiswahili. Perhaps exposure to a literate representation of these languages has not been equal for all students.

The influence of literate language in the school environment. In school, literate representations of language come from two primary sources; from books and from

what the teacher writes on the blackboard. Access to what the teacher writes on the blackboard is available to all students equally. Access to books is not.

In both the Nairobi (OLM) and Mombasa schools, students must provide their own textbooks. Students' access to written language from textbooks in school, therefore, is limited by the ability of their parents to buy them. The purchasing of textbooks is a major educational expense for parents and this expense cannot be underestimated especially for parents with limited financial means who have several children.

In OLM, most of the students have the required textbooks for most of their courses. It was only on a few occasions that I observed students sharing textbooks during a class. In the Mombasa schools the picture was quite different. Here, many students did not have even a single textbook, let alone appropriate textbooks for each subject area. It was not uncommon to see three or four students sharing (or attempting to share) a textbook during a lesson.

The Mombasa classroom teachers and school administrators are not unconcerned with nor unmindful of this state-of-affairs. They do stress the importance of having books to their students.

At OLM the teachers extensively incorporated the use of textbooks in their lessons. Sometimes entire class periods were devoted to reading (silently) and working from textbooks. In addition, OLM had a library collection for each

standard. Teachers set aside several periods during the week for students to select books from the library and read.

The teachers in the Mombasa schools, being sensitive to the fact that many of their students did not have textbooks, relied more extensively on oral instruction, either in lecture form or in the form of reading to the class from a text. Neither of the Mombasa schools, to my knowledge, had libraries.

The respective school environments, then, provide for differential access to a literate representation of language across populations as well as within each population. Access to literate representations of language is most available generally for students at OLM. Such access is more highly restricted for many, but by no means all, of the students in the Mombasa schools.

Literate Language and the Home and Extracurricular Environment

Print media abounds in Nairobi. It is so pervasive that it is impossible to ignore. Not only does Nairobi have an abundance of bookstores and magazine-stands, used book and magazine sellers are found everywhere on the streets in most every neighborhood. People, from shoe-shiners to bank executives, are to be seen everywhere reading newspapers (primarily the English daily papers). A child growing up in Nairobi, whether he comes from an educated family or an uneducated one, grows up surrounded by a print rich environment.

Most of the OLM students do, however, come from families where at least one parent is educated and literate. It is highly likely that such students have had quite a lot of exposure to print before they enter school.

The presence of print media in Mombasa, though by no means absent, is not nearly so pervasive or obvious. There are several good and well stocked bookstores in Mombasa Town which stock good collections of both English language and Kiswahili language books. In the streets, one is not likely to see many people reading newspapers. In the more rural outlying areas of Mombasa, there are no bookstores and few newspaper and magazine vendors. The Mombasan student does have access to print media in his environment, though his exposure to it may be limited by where he lives and by the affluence of his parents.

The fact that many of the Mombasa students go to school without books implies that they perhaps also do not have books at home. Though I do not know this to be the case for certain, this does seem to be a reasonable assumption and it fits with what the teachers and students told me about their (the students') backgrounds.

Summary of Oral and Literate Environmental Factors Which
Influence Attainment of Literate Modes of
Language Representation

If only the speech environment of the Kenyan school students is taken to account for language development in general, and the development of Level II Extensional Grammar

abilities in particular, then the variation within the Mombasa sample itself cannot be fully accounted for. The oral language environments of the two populations of school children are very similar within the context of school curriculum. Instruction in both schools is in English and teachers at both schools, in general, appeared to be equally fluent in the language. Students in Nairobi, though, hear (and probably use) more English in different contexts (both in school and out of school) than do the students in Mombasa. This observation would indicate that the Nairobi population would have a slight advantage over the Mombasa population with respect to their performance on a language test measuring English. The results of the TSA-E do show this to be the case when the populations of the two school groups are compared.

However, an examination of the test scores on the TSA-S in the Mombasa sample showed that the scores for native speaking Kiswahili students on all of the complex (non-sequential) structures were about the same for both the TSA-S and the TSA-E. The students in the Mombasa schools are immersed in an environment where Kiswahili is spoken frequently. If exposure to a rich oral environment were all that is responsible for the acquisition of complex structures, then these results could only be explained by attributing it to a high incidence of some organically based impairment in this population. It was pointed out that this

explanation is untenable for a number of reasons; all of them seemingly sound ones.

The alternative explanation then points to factors which relate directly to students' access to literate representations of English and Kiswahili. Given the evidence that the input from literacy does affect the way in which native English speakers deal with complex sentences (reviewed extensively in Chapter VI of this document) an examination of the respective literate environments of these two populations was made. If my observations are accurate, then there does exist the possibility that the access to literate representations is severely restricted for a group of students within the Mombasan population, namely, those students who do not own or have easy access to books. Moreover, there exists the additional possibility that differences that were observed to obtain between the Nairobi and Mombasa populations are due to the fact that the Nairobi (OLM) students grow up in a print-rich environment both at home and at school, while the Mombasan students grow up in an environment where access to literate media is more limited.

In conclusion, it is more likely that the variance that was observed between the Mombasa and Nairobi populations, and that observed within the Mombasa population itself, are due more to environmental factors related to literacy than to those related to oral language. It seems, then, that Assumption II is the more tenable one. These factors,

though observationally accurate, have yet to be quantified though similar observations have been made by others (see for example, British Council, English language and literature division, 1979). Additional documentation of the literacy environments in different regions in Kenya, both in and out of the educational setting, is but one direction of further research suggested by this study.

There is much external support for the above conclusion. Research in reading has demonstrated clearly that children who grow up in literate societies (and homes) know a great deal about reading before they come into contact with formal schooling (Hiebert, 1980, 1981; Ferreiro & Teberosky, 1982) and that the knowledge they have learned about reading (not reading itself) is an important factor in the acquisition of literacy (Ehri, 1979; Evans, Taylor & Blum, 1979; Taylor & Blum, 1981). Some research (Sakamoto, 1975; Sheridan, 1982) even suggests that the incidence of reading disability in a population may be related to limitations on the access to print.

Furthermore, research in bilingual education indicates that when literacy is acquired (either in a first language or a second language) it is acquired for all language (Cziko, 1976; Lambert & Tucker, 1972; Tucker, 1974). Other studies, which focus on how literacy (and schooling) affects individuals' conceptions of non-literate language (Greenfield, 1972; Greenfield & Bruner, 1966; Scribner & Cole, 1973) lend further support to this observation. The

exigencies of the sociolinguistic milieu, though, may effect a population's motivation to become literate in a language other than the speaker's native one(s) (Rosier & Holm, 1980). Nevertheless, Smith's dictum (1984) that once a person has joined the "literacy club" he becomes a member forever continues to gain support. The implications of this dictum has for the promotion of literacy within the current educational setting in Kenya will be discussed in the second section of Chapter VIII.

CHAPTER VIII
EXPLICATIONS AND IMPLICATIONS

The research data and my analysis of them raise some provocative issues both in the field of Linguistics and in language pedagogy. In this final chapter, I will, as best I can, address those issues and their implications to future research.

Implications of Intensionality and Literacy
for Linguistic Analysis

The results of this study have led to the conclusion that there are, minimally, two levels or types of grammars labelled as Level I Extensional Grammar and Level II Intensional Grammar. A Level I Extensional Grammar is, I would claim, part of the linguistic competence of all language users. A Level II Intensional Grammar is part of the competence of language users who have acquired literacy. Particularly relevant to this distinction is the recent finding reported in Chapter VI that adult native speakers of English who have acquired the ability to read the language show Level II linguistic competence while those who cannot or have not learned to read (illiterates) appear to be limited to Level I processing of language. Illiterate adult

native speakers show no awareness of the phonemic segments of spoken language, the intensional affixes of oral complex words, nor do they utilize the functional information conveyed by intensional words to parse spoken sentences. In the research on the syntactic competence of literate and illiterate adult native speakers of English, spoken English questions were asked of the subjects. A question such as, "If a boy watching a girl runs away, who runs away?" elicited consistently different responses from the two groups; the response "a boy" from readers and the response, "a girl," from non-readers. The illiterate's response is, then, based not on the grammatical process by which clauses are embedded but rather on a strategy that takes the noun phrase immediately preceding a verb as the subject of that verb (a strategy which they also employ in a variety of other cases such as reversible passives and permuted subject/object NPs in expressions such as "man-eating lions"). This is the same strategy which was employed by a number of the Mombasa students for comprehending certain structures on the TSA-E and TSA-S and previously discussed in that context. There are, then, a number of oral sentence structures which are understood in one way if a Level II analysis is employed and in a very different way if a Level I analysis is used.

Let me note that the assumption that the Mombasa students performance on the tests which were administered

are in fact comparable to the English speaking adult illiterates performance on oral language measures is, at present, based on inference. Further investigation of the students' comprehension of linguistic structures would require the use of an oral testing format in addition to the written tests which were administered. Data derived from such a method, I feel, are needed in order to verify the results that were obtained using the protocols which were used in this current study.

Nevertheless, the implication of the research with adult illiterate native speakers of English, paralleling in very interesting ways the findings for the Kenyan population, is that for any given language there are literate (Level II) and non-literate (Level I) modes of analysis and production (provided that the language has a literate representation).

The distinction made here between literate and non-literate modes (forms) of language is very like the distinction Givón makes between what he calls "pragmatic" and "syntactic" modes (though he does not, to my knowledge, ascribe the differences between the modes to literacy). He contrasts these modes as follows (1985 p. 1018):

pragmatic mode

- a) topic-comment structure
- b) loose coordination
- c) slow rate of delivery
- d) small chunks under one intonation contour
- e) lower noun/verb ratio in discourse, with more simple verbs
- f) no use of grammatical morphology

syntactic mode

- subject-predicate structure
- tight subordination
- fast rate of delivery
- large chunks under one intonation contour
- higher noun/verb ratio in discourse, with more complex verbs
- extensive use of grammatical morphology

Of particular interest in the present discussion are those features shown as a) and f) in Givon's list of distinguishing characteristics. Givon claims that the syntactic mode arises "ontogenetically, diachronically, and probably also phylogenetically" by the syntacticization of the pragmatic mode (pp. 1017-1018). He claims further that while children initially command only the pragmatic mode (and over time syntacticize it), adults retain the whole range of modes and use them appropriately under appropriate conditions. These claims are entirely consistent with the identification of adult illiterate grammar with that of pre-literate children in the work of Scholes and Willis (1987a). These authors found that phonological, morphological, and syntactic abilities of native speakers of English were essentially identical in children and in adults in the absence of literacy and that the attainment of reading skill enabled speakers to utilize intensional processing of spoken language as early as the third grade (age 8). The phylogenetic transition from Givon's "pragmatic" to his "syntactic" (my extensional to intensional) modes are indicated by reports of the affects which the

attainment of literacy have had on cultures. Studies of the affect of the introduction of literacy on oral language in contemporary societies (e.g. the Vai; Scribner & Cole, 1981) demonstrate such changes, and speculations on the pre-literate stages of western cultures (McLuhan, 1962) support the thesis. In the context of changes in language in historical times, the pragmatic to syntactic shift is compatible with the ideas of Edward Sapir. While Sapir's views are in no way consistent with contemporary conceptions of language and grammar (for him, language is speech), his ideas can be nicely incorporated into the extension/intension framework. He presents a thesis (1921 p. 114) to the effect that, "All of the actual content of speech, . . . is in origin limited to the concrete." As illustration, he notes the change in English of the genitive in 'The law of the land.' Where the word 'of' had an earlier, concrete (extensional/pragmatic) reference paraphrasable as 'deriving from', it is now thought of in its quite relational (intensional/syntactic) sense of its linking of 'law' and 'land.'

If this extensional-intensional typology is to be taken seriously so too must the assumptions which adhere to it: Namely, that there is a difference between (exclusively) oral languages and literate spoken languages--a difference captured in the terms "orality" and "literacy." In the description of the conference on orality and literacy sponsored by the McLuhan Program in Culture and Technology

held in Toronto in June, 1986, the organizers, David Olson and Paul Bouissac, defined these terms as follows:

Orality, the capacity of an individual or society to communicate linguistically in an exclusively oral manner, is often defined negatively in terms of the absence of a reasonably optimal writing system.

Literacy, the capacity to communicate by means of a linguistically based system of visual signs, that is, an orthography, is generally considered to be a secondary development in cultural evolution, with properties, uses and effects similar to those of oral languages.

In this context, it may be well to note that these same authors continue in the same document, "However, striking differences between oral cultures and literate ones, and differences between societies possessing various forms of writing systems, have led classicists, historians, anthropologists and psychologists to re-examine existing assumptions about orality and literacy and the consequences entailed by such differences both for individuals and societies."

Where I am differing from these established distinctions between orality/oral language and literacy/written language is in my consideration of either of these types or modes of linguistic processing being applied to spoken discourse. That is, utterances may be treated orally (i.e., in a concrete, pragmatic, extensional fashion) or literarily (i.e., in a functional, syntactic, intensional fashion). The distinction here is not one of how language is transmitted, but of how it is analyzed by the speaker-hearer.

As has been discussed previously, exclusively oral users of languages (pre-literate or illiterate) are characterized by employing a lexicon of gestalt elements and a syntactic component which assigns grammatical functions on the basis of linearity and adjacency. Literate users of the same languages, on the other hand, demonstrate morphological analysis of lexical items into stems and affixational processes and a syntactic component employing discontinuity, embedding, and metathesis of grammatical constituents. If the language user is a reader of an orthography which employs an alphabet in its literate form, then phonemic representations of linguistic elements are also available (Read et al., 1986).

It is important, at this point, to be clear as to what does or does not follow from the characterizations presented here. In particular, I want to be clear that the notion of levels of grammar are being applied to language users (or, more properly, language knowers), not to the "languages" themselves. That is to say, claims of the form "English (or Kiswahili) is an oral/literate language" are not being made, rather, the grammatical analyses (Level I and Level II) are here considered as ways of dealing with the named languages. This is an important point since it would appear that a number of linguists (e.g., Kalmar, 1985) have taken the (misguided, from the present perspective) approach that languages may be classified in this way; in particular, that certain languages may be thought of as "primitive" (read,

"oral") on the basis of the presence or absence or selected syntactic or morphological properties.

The view espoused here is that (probably any and all--but certainly English and Kiswahili) languages may be treated intensionally or extensionally, depending on the cognitive and analytical capacity of the user. The property of languages to allow for either type of grammatical analysis may be seen in the fact that the duality of processing gives rise to certain types of ambiguity. Both English and Kiswahili show sentences which can be interpreted intensionally or extensionally, thus producing ambiguity for the literate (Level II) speaker but not for the illiterate (Level I) user. Consider for English,

The detective was found by the policeman.

For literate knowers of English, the word "by" has, in this sentence, both an extensional reference (i.e., "near") and an intensional interpretation (i.e., subject marker). For such people (i.e., users of a Level II analysis) the sentence is ambiguous. For illiterates, however, the intensional aspect is not available, and the sentence is not ambiguous but clearly refers to the spatial relation between the detective and the policeman. Similar ambiguities of English sentences can be seen in the spoken forms of 'John hurt the boy with a knife' (where 'with' may be extensionally 'who had' or intensionally 'instrumental'), or "the paint drops" (where "-s" may be extensionally plural or intensionally third-person singular). Such variations in

the interpretation of single spoken English sentences provide consistent differences between adult literate and illiterate native speakers.

Spoken Kiswahili similarly allows for structures which are ambiguous over extensional and intensional readings. The grammatical elements in the following sentence can be given either an extensional interpretation or an intensional one.

Mvulana ambaye alitazamwa na Asha alitupa mpira.
'The boy was was watched by Asha threw the ball.'

The "subject" /a-/ concord markings on the verbs can be interpreted extensionally as pronouns and in fact are used that way often by speakers when the noun referent is understood (i.e. in a context). The concrete interpretation of Kiswahili concord I am suggesting parallels an identical interpretation of concord in Latin discussed by Sapir (1921 p. 113). In terms of the extension/intension dichotomy the passive marker /-w/ is interesting in a number of ways. First, it occurs on the verb in a position where other semantic verbal modifiers can occur (e.g., causitive, reciprocal, stative, etc.) Second, it changes the semantic meaning of the verb. When the passive /-w/ is affixed to a verb stem, the verb cannot take an object marker: it is a passive, intransitive verb. The passive marker, in other words, means passive. As such, it applies only to the verb and not to the sentence as a whole. In the case of the example above, the extensional reading would then be that 'the boy watched.' In this reading, the particle 'na' is

then given its extensional interpretation as a conjunction (i.e., it is not associated with the verb); the result being a reading 'the boy watched and Asha threw the ball.' This extensional interpretation was used by 35% of the Mombasa subjects.

However, /-w/ can also be intentionally interpreted, in which case its domain is the sentence in which it occurs, not just the verb. In this intensional interpretation, /-w/ is virtually identical to the intensional aspect of passive in English. If the passive is interpreted intensionally, the extensional meaning of passive verb (i.e., semantic passivity) is lost. In this case, the /-w/ affix is no longer interpreted as an integral part of the verb stem, but takes on sentential properties which assign subject and object roles to the noun phrases in the sentence.

In its intensional/extensional ambiguity, the Kiswahili passive closely parallels the English forms. If, as in the example above, the extensional interpretation of 'by' is taken (i.e., as 'near'), then the "passive" verb, 'was found' is no longer a transitive passive verb but, instead, is taken as a copula plus a predicate modifier, comparable to 'the detective was tired.' I might also note here the fact that English too employs an extensional form of the passive; namely, the "got" passive. In this form (e.g., 'the boy got caught') the verbal constituent takes on a much more semantically passive reading than in the alternative ('the boy was caught') and, interestingly, the 'got' passive

is acquired by English speaking children several years before the 'be' passive is mastered.

The point emphasized by these illustrative examples is that the utterances of the speakers of a language (here English and Kiswahili, but probably all languages) are not, in and of themselves, Level I and Level II, rather, they may be analyzed in either of these two ways. The distinction made here between "languages" and language analysis is of crucial importance to linguists. As Chomsky points out (1971 p. 83),

We can use the term grammar of a language ambiguously, as referring not only to the speaker's internalized, subconscious knowledge but to the professional linguist's representation of this internalized and intuitive system of rules as well.

In this ambiguity lies the crux of a major problem of linguistic science. While Chomsky may recognize the ambiguous status of "grammar," many practicing linguists do not. Consequently, the "grammar" devised by the sophisticated, literate, analytical mind of the professional linguist to represent the competence of the speaker of some language may well be more highly representative of the linguist than of the informant. Consider, as proof, the fact that students of linguistics are taught that all speaker-hearers share a single grammar of the language (see, for numerous claims to this effect, Fromkin and Rodman, 1974). Such teaching is, given the fact that literate and illiterate adult native speakers of single languages employ vastly different analyses of spoken language, seriously misguided and misleading.

Since, as is now known, there are adult native speakers of English whose grammars do not show the intensional properties of Chomskyan generative-transformational algorithms, then it is very likely the case that similar analyses of other oral languages are in error.

Literacy and Language and Its Implications for Primary Education in Kenya

The results of this study contribute to the growing body of literature which is lending confirmation to the view that the acquisition of literacy has important consequences to the acquisition of language. Since literacy is acquired largely through the course of formal schooling, education becomes an even more significant variable in the language-literacy equation.

The Problem of the Language of Literacy in Kenya

At first glance, it would seem that literacy would have a salutary affect on the problems of education in a multilingual society such as Kenya's. If it is true that once literacy is acquired in one language, and the literate, Level II linguistic capacity thus acquired transfers to other domains (including other languages), then it would follow that the language through which one acquires initial literacy is relatively unimportant with respect to the acquisition of literacy itself.

Particularly relevant to the Kenyan situation is the affect of the acquisition of first language literacy on the

learning of additional languages. Krashen (1985 pp. 72ff) points out two important ways education and the attainment of literacy in the first language of a child assists his learning of a second language. First, Krashen points out that a quality education (including literacy) in the child's first language promotes the child's ability to use language to learn. Second, education in the first language allows the child to develop knowledge bases both of the world and in specific subjects. Both the ability to use language to learn and the knowledge of the world and of specific subjects, according to Krashen, will transfer immediately to a second language learning situation. One stone, in other words, will get you two birds if it is properly thrown.

The problem Kenyan school children confront is that they are not, under the present educational system, allowed to develop (through education and literacy) the ability to use their first language to learn. The immediate consequences of this state of affairs is that the affects of much of the first few years of primary education are likely to be compromised due to the child's lack of access to input that is comprehensible to him (i.e. English). Whether this affects academic achievement and attainment of literacy only in the short-run, or if it has long term affects as well is a matter for further research.

The Kenyan Government and it's Ministry of Education are aware of the desirability of promoting initial education and literacy in the mother-tongue. They have long

recommended that pre-primary education be conducted in the child's native language. Effective implementation of such education, though, is severely limited by the lack of funds to support the development of appropriate curriculum materials as well as money to provide teachers with the additional training necessary to teach in the various languages of the country.

Yet, it appears that a move towards advancing education through a child's native language is highly desirable; not just to promote initial native language literacy, but to promote sustained literacy attainment in any language. The research reported in this dissertation indicates strongly that the acquisition of literate (Level II) linguistic competencies is a process which requires considerable exposure to literate representations of language. Such competencies do not seem to be acquired only through reading and recognizing written words. As was shown earlier, while most of the Mombasan school students in the upper primary grades could determine the correct spellings of words, a substantial number of them were not literate with respect to having a command of a Level II Grammar. This finding taken in the context of Krashen's work and others (e.g. Cziko, 1976) suggests that exposure to literate representations in one's native language only during the very early years of primary school is not sufficient to promote increasingly higher levels of literacy in any language. At present, there is good reason to believe that literacy in Kenya,

whether it be in English or any other language, would proceed much faster and perhaps more effectively if it were promoted through extended education in any language where individuals have acquired a sufficiently rich oral basis (a Level IB competency) upon which to build intensional (Level II) representations. Since Kiswahili has become a widely known and widely used "oral" language throughout the country, it presents itself as a reasonable candidate for inclusion in such a plan.

Literacy and Its Affects on Academic Achievement

Much of my discussion of the data drawn from this study and that drawn from research of the linguistic abilities of native English speaking illiterate adults in Chapter VI has concerned the characterization of linguistic abilities in the absence of literacy. Among the linguistic tasks that literate language knowers can perform that illiterate language knowers cannot are:

- phoneme deletion (the ability to isolate and manipulate phonemic segments)
- manipulation of morphological segments (e.g. recognize the word 'spell' inside the word 'misspelling')
- apply non-sequential rules to interpret complex syntactic forms (e.g., embedded clauses, nominalized propositions, passive sentences, etc.)
- make judgements regarding the form of sentences independent of their pragmatic contents.
- perform linguistic analogies (e.g., of the form 'Today I sing, yesterday I _____')

From these observations, the question most relevant to education is whether these various aspects of linguistic knowledge relate to academic achievement or not and, if they do, in exactly what ways. If such types of knowledge are shown to affect academic achievement, then an additional question is what are the most effective means of imparting such knowledge to students.

The results from the experimental reading tests (the WRC and RCT) showed that the students who had the linguistic knowledge given by a Level I Grammar performed almost as well on word recognition tasks as did those students who had Level II competencies. This implies that the relative lack of academic achievement by these students is not due to their ability to read words or make judgements on the correct form (spelling) of words. Whether or not this ability implicates the presence of phonemic knowledge is at present a matter of speculation, since such oral tests as phoneme deletion were not administered during the study. However, the error results showed that when students chose a wrong spelling, they most often chose a phonological misspelling. Though the error results are not sufficient to allow definite conclusions to be made, they do indicate that these students had the knowledge that speech sounds are represented by discrete symbols. That is, some degree of intensional linguistic competency is indicated. Further research would be needed to verify this result.

The test of reading comprehension (RCT), however, showed that the students who have not acquired the Level II competencies which allow for an intensional and non-sequential interpretation of complex sentences do not comprehend a written text as well as those who have. The results and analyses of the complete body of tests (i.e., the TSA-E, TSA-S, and the reading tests) indicate, then, that the extent to which many of the Mombasan students are not fully literate is due to linguistic factors, not to such marginalia as "word finding" or "word recognition" or "inferencing." More specifically, these linguistic factors appear to be just those which distinguish literate from illiterate native speakers of English, that is, the ability/inability to construct word meanings through an analysis of the constituent morphemes (especially, the intensional affixes) and the ability/inability to utilize intensional morphemes to decode the constituent structure of sentences, that is to say, the ability or inability to apply a Level II grammatical competence to the task of reading comprehension. Further, the more concrete, extensional analyses of written language seen in the Level I group of Mombasan subjects would appear, given the data on English speaking illiterates, to characterize their production and comprehension of spoken language as well.

Implications for Educators

From this perspective it is now fairly clear that the task of the primary school educator is not a simple matter of teaching children to read (if such a task can be considered in any way 'simple'). The child who fails or falls behind in the acquisition of reading is not limited in his handicap to the comprehension and utilization of printed text but, rather, faces the difficult task of operating, with limited means, in a linguistic and cognitive world of increasingly abstract and intensional sophistication.

Literate (formal) education, like literate representation itself, proceeds from the act of taking 'real-world' knowledge (that which is knowable through experience) out of the real world. The content of education and the way it is transmitted are both "decontextualized" (Goody, 1977; Olson, 1977). A student who is not able to deal with the abstract decontextualized forms of representing content is not likely to fare well in such a setting, although he probably is very capable of learning very well through direct, contextualized experience.

The development of literacy, it seems, proceeds at least initially from experience: principally experience with language and meaning conveyed through language. Krashen, in reviewing the literature that relates literacy to the advancement of linguistic knowledge, has noted

While experience with oral/aural language provides a great deal of grammatical competence for readers to use, the primary means of learning to read and of improving reading skills is plenty of reading

for meaning--more reading means more language acquisition and more familiarity with conventions of written language.

If one of the major goals of education in Kenya is to affect an increasing advancement of language and literacy skills, then teachers, parents and school administrators should promote the attainment of literacy through every means they have available. Teachers should be encouraged to read out loud to their students. Research has shown that while reading out loud to students does not teach students to read, it does get students interested in books. That is, they begin to acquire insights into the function of reading. Reading out loud to students is a way of making a decontextualized body of knowledge (e.g. the information in a written story) available to be learned through a more direct mode of experience. Moreover, reading out loud familiarizes students with the structure of written prose (Smith, 1982; Teale, 1984) and with literate grammatical structure (Chomsky, 1972).

Teachers should talk about what is in a given text before the child is required to read it. In this way a more enriched context is provided for further interpretation. The more information about the subject matter of a text that readers have available to them, the better able they are to make more accurate predictions about meaning (i.e. the better they comprehend) (Krashen, 1985 p. 106).

Most importantly, students should have a wide range of written material available to them. In establishing

educational spending priorities, the importance of making books readily available to students should be recognized.

Conclusion

In this dissertation, I have presented data which suggests that the Mombasan subgroup of students identified as being Level I Extensional Grammar knowers are less successful academically than their more literate peers. From this correlation, it is possible to assume tentatively that the etiology of school failure is, at least in part, tied to the failure to acquire a literate means for interpreting language. The acquisition of literate language competence (Level II Extensional Grammar) does not appear to be a single-step function. It is a complex process which requires considerable experience with literate input. As Ehri (1979) has so eloquently put it:

If the light were not so gradual in dawning, the relationship between speech and print might count as one of the most remarkable discoveries of childhood. At a point when the youngster has achieved substantial competence with spoken language, he learns that this highly traveled terrain contains parts he never noticed before. This insight comes as a consequence of learning how it is that language can be represented in an entirely different modality, one designed for eyes rather than ears.

The consequence of this discovery, it seems, are considerable.

APPENDIX A1

SAMPLE OF ENGLISH SYLLABUS FOR STANDARDS 1, 6 AND 7

This is a sample of the vocabulary and structures to be taught at Standard 1. The lists indicate the minimum content to be learnt.

Standard One

Words to be introduced orally.

* Children are expected to understand these words but not to say them. All underlined words are reading items as well.

Verbs

All forms of be except been are to be introduced.

*answer	jump	<u>stick</u> , <u>stuck</u>
*ask	kick	<u>stop</u>
be	*know	take, took
bring, brought	leave, left	<u>teach</u>
<u>carry</u>	listen to	<u>throw</u> , threw
<u>catch</u> , caught	<u>look at</u>	touch
*clap	open	turn round
<u>clean</u>	<u>play</u>	walk
<u>close</u>	point at	wear, wore
come, came	pour	<u>will</u> (won't)
cry	pull	<u>write</u> , <u>wrote</u>
cut, cut	push	
<u>do</u> (does), <u>did</u>	<u>put</u> , put	
<u>draw</u> , <u>drew</u>	<u>read</u> , read	
<u>drink</u> , drank	ride	
<u>drive</u>	<u>run</u> , ran	
<u>eat</u>	<u>say</u> , <u>said</u>	
<u>give</u> , gave	*show	
<u>go</u> went	sit, sat	
<u>have</u> (has)	<u>speak</u> , spoke	
<u>hold</u> , held	<u>stand</u> , stood	

Nouns

<u>baby</u>	<u>hair</u>	<u>stick</u>
<u>bag</u>	<u>hand</u>	stone
<u>ball</u>	head	Sunday
<u>banana</u>	headmaster	<u>Swahili</u>
basket	headmistress	<u>table</u>
bean-bag	home	tea
<u>bicycle</u>	hour	<u>teacher</u>
<u>blackboard</u>	house	Thursday
<u>book</u>	husband	time
<u>bottle</u>	<u>ink</u>	toe
bottle-top	jug	top
bottom	left	tree
box	*letter (of alphabet)	Tuesday
<u>boy</u>	line (drawn)	wall
<u>brother</u>	<u>man</u>	water
<u>bus</u>	match	Wednesday

button	matchbox	week
<u>car</u>	<u>milk</u>	wife
*card	Miss	window
cardboard	Monday	woman
<u>cat</u>	morning	
chair	<u>mother</u>	
chalk	<u>mouth</u>	
child, <u>children</u>	<u>Mr</u>	
circle	<u>Mrs</u>	
classroom	nail (finger)	
colour	<u>name</u>	
corner	newspaper	
<u>cow</u>	nose	
cup	office	
cupboard	page	
daughter	pair	
day	paper	
desk	pen	
<u>dog</u>	pencil	
door	<u>picture</u>	
dress	piece	
duster	pin	
ear	pocket	
English	pupil	
eye	*question	
<u>face</u>	right	
<u>father</u>	ruler	
<u>finger</u>	Saturday	
<u>floor</u>	<u>school</u>	
foot	schoolboy	
Friday	schoolgirl	
<u>friend</u>	scissors	
*game	shirts	
girl	shoe	
<u>glass</u> (drinking)	shorts	
<u>grass</u>	<u>sister</u>	
group	sock	
<u>gum</u>	son	

Pronoun

<u>he</u>	theirs
<u>her</u>	them
hers	these
him	<u>they</u>
<u>his</u>	<u>this</u>
I	those
it	<u>us</u>
<u>me</u>	<u>we</u>
mine	<u>what</u>
ours	who (interrogative)
<u>she</u>	you (sg & pl)
that	yours (sg & pl)

Adjectives

any	<u>red</u>
big	<u>some</u>
black	that
<u>blue</u>	their
brown	these
every	those
green	what
<u>her</u>	white
<u>his</u>	whose
little	yellow
<u>my</u>	your (sg & pl)
<u>our</u>	

Adverbs

ago	round
also	there
down	there + is/are
half-past	today
here	tomorrow
how (+many)	<u>too</u> (as well)
inside	up
<u>not</u>	when
<u>now</u>	where
outside	yesterday

Numerals

one _____ fifty

Prepositions

<u>at</u> (place)	<u>of</u>
behind	<u>on</u>
between (place)	out of
by (place)	outside
except	past (time)
from	<u>to</u>
<u>in</u>	<u>under</u>
in front of	<u>with</u> (accompanying)
inside	<u>with</u> (by means of)
<u>into</u>	

Conjunctions

and

Articles

a (an)the

Particles

NoYesO'clock

Interjections

GoodGoodbyepleaseHelloThank you

Other reading items not included in above lists

bus stopMarydriver'sGood morningTomKamau

Sentence Patterns (45 are listed this is just a sampling)

1. What's this/that/it?
What are these/those/they?
2. This is/That's/It's a (book)
These/Those/They are (books)
3. What's my/your/his/her name?
4. My/Your/His/Her name's (Tom/Mary)
5. Whose (pen) is this/that/it?
Whose (pens) are these/those/they?
6. It/This (pen)/That (pen)/My (pen)/
Her (pen)/Mary's (pen) is in/on my/ your
/his/David's (hand/pocket/desk/table).
7. Present Continuous affirmative intransitive,
e.g. She's running.
8. Imperative with and without please, e.g. Sit down.
Please sit down.
9. Indirect object with (a) Imperative and (b) Present
Continuous, e.g. Give it to John. I'm giving it to
him.

10. 'What . . .?' questions demanding replies in the Present Continuous and with Indirect Object, e.g. What are you bringing him?
11. Present Continuous Negative, e.g., He isn't sitting down.
12. Adjectival phrases combined with first introduction of the e.g. The boy in the picture is Tom.
13. There is/isn't + Nominal + Adverbial, e.g. There's a book on the table. There are/aren't + Nominal + Adverbial. Is there/ Are there + Nominal + Adverbial.
14. Some and any with uncountable nouns, e.g. There's some water in the bottle. There isn't any milk in the bottle.
15. "How many . . .?" questions, e.g. How many books are there on your table?, with numerals one to ten in the replies.
16. Plain Past of be with suitable adverbials and also Impersonal It, e.g. It was on the table. Plain Past of other verbs. 'Did . . .?' questions requiring 'Yes/No' answers. Adverbials to include 'telling-the-time' adverbials. 'When . . .?' questions.
17. Plain Future with will/ 'll, but not shall.
18. Plain Present of have, e.g. I have two pens. She hasn't a beanbag. Have you a pencil? Plain Present of other verbs.

Standard Six

All words to be pronounced as well as read.

Vocabulary

advertisement	patiently
afford	peg (N)
amazed	pip
annoy	plough
antiseptic	poison (N)
arque	pride of lions
argument	printed (adj)
balloon	printing press
board (N)	problem
book (V)	produce (N) (V)
boundary	prove
business	pulse
care about	raft (N)
carry on with	ranch

carry out
 chat
 citrus fruit
 column (in a newspaper)
 complain
 concert
 confused
 count (someone's pulse)
 crate
 damage
 damaged (adj)
 determined
 dip (N) (V)
 discuss
 disease
 disturb
 double (adj)
 earn one's living
 editor
 efficient
 examine (medical)
 faint (V)
 fan (N)
 fetch
 flavour (N)
 fortune
 get into trouble
 give up
 glue (N)
 grocer
 groceries
 guilty

halt
 hate
 have a chat
 headline
 heartbeat
 home safety
 hum
 hump
 ignore
 illustration
 improvement
 insecticide
 iron (V)
 kill (N)
 license
 like the back of his hand
 lift (N)
 literacy classes
 mad about
 magistrate
 mass production

ranching (N)
 rear (V = bring up)
 recommend
 restaurant
 return ticket
 road safety
 run parallel
 safety
 salesman
 scribble
 secretary
 seedling
 set off (=depart)
 settlement area
 slit (N)
 solve a problem
 spray (N)
 stalk (N)
 stir
 storey
 strength
 suitable
 swerve
 swing (N)
 technical (adj)
 thread (V)
 tick (=insect)
 trace (V)
 track (V)
 try (it) out
 tune (N)
 turning (N)
 typed (adj)
 typewriter
 urgently
 value
 washer
 wavy
 windscreen

member
 miracle
 modern
 mosquito, mosquitoes
 mouth organ
 occasionally
 on purpose
 out of breath
 parallel
 patient (adj)

Sentence Patterns and Structures

1. Indirect object as subject in the Passive.
2. make someone do something in the Present Perfect Passive, e.g. She was made to clean the blackboard.
3. hear/see/went/have/get/would/like + Nominal+ Past Participle, e.g. He wants the man found immediately.
4. Nominal + of + possessive, e.g. a friend of Mary's.
5. Clauses as noun qualifiers, e.g. the food your mother packed.
6. Present/Past Continuous Passive
7. Noun groups
 noun + noun, e.g. taxi driver
 noun + noun + noun, e.g. classroom door
8. Adjective + noun + noun groups.
9. Show/tell + nominal, e.g. She showed/told her how to give an injection.
10. Whose as a relative pronoun.
11. The conditional in such sequences as: What would you do if you wanted to catch a train? I'd go to the railway station.
12. The conditional in reported speech, e.g. I thought he'd bring his library book.
13. Wonder + how/why/where/what/when.
14. It's a really/rather a/quite a/+ adjective + noun, e.g. It's quite a sweet drink.
15. Predicative adjectives -
 /ashamed/pleased/asleep/well/ready/afraid/.

16. 'Tell/ask/show/ + Nominal + /who/whose + clause, e.g.
Tell me whose passion fruit was diseased.
17. Passive formed with get. All tenses.
18. /Get/remind/allow/like + Nominal + Infinitive, e.g. He
got them to put the drying coffee on sisal.
19. The Future Continuous tense in affirmative and
negative.
20. Conditional sentence involving impossible conditions.
 - a. Affirmative, e.g. If I'd had some training, I'd
have got the job.
 - b. Negative, e.g. I wouldn't have got it if I hadn't
looked smart.

Standard Seven

Vocabulary

anti-clockwise	inheritance	scar (N)
anxious	in morning	scrape off
anxiously	in return	serious
approach	instinct, by instinct	signal (V)
approved	in torrents	signature
arrange	jealous	slaughter (V)
arror-root	Jealousy	a species, species
attract	Kingship	spit
bargain	knead	spread (V)
befall	ladle (N)	stand to attention
belly	laughing matter	star (V)
bewitched	lullaby, lullabies	a state of poverty
blacksmith	lump (N)	stubborn
brew (N) (V)	luxury	supplies
bribe (V)	manage (manage to do)	telephone directory
bullock	manners	telephone exchange
by word of mouth	minor (adj)	tempt
calabash	mortal (adj)	thatch (V)
carcass	mourn	thatched
care (N)	mourning	threat
cassava	mysterious	threaten
category,		
categories	mystery	tide
cautiously	nobly born	tounge-tied
celebrant	nomad	too much on my hands
clan	nomadic	tough
clang (V)	normal	tradition
clatter (V)	nought	trash
clockwise	observation	trust (V)
compost heap	observer	upset (V)
crouch down	opponent	urge (V)
curse (V)	organize	vaccinate

daydream (V)	parish	wade
deal, dealt	particle	wattle tree
decay (V)	pass book	whip (N)
denote	pause (V)	whiz
deposit	peacefully	
describe	perform (an emergency operation)	
despair (N) (V)	persuade	
diagram	pestle and mortar	
dough	pinch (V)	
drought	pregnant	
duet	prepare for	
erosion	preserve (V)	
evil spirits	prevent	
export (V)	profit (N)	
expose	project (N)	
ferment	provide something	
fin	puberty	
fond	puff-adder	
frond	rage (N) (V)	
generation	recklessly	
grate (V)	refoice	
grave (N)	relatively	
harvest	require	
helter and skelter	rescue	
hiss (N) (V)	research	
honeycomb	re-settle	
horizon	resources	
husk IN)	return (a good return)	
identical	revered	
illegal	rhythm	
illiterate	rigging	
import (V)	rival (V)	
in fact	river bed	
infection	sacred	
inherit	sacrifice (N)	

Sentence Patterns and Structure.

1. Make/keep/find/leave/ + Nominal + Adjective, e.g. It made him angry.
2. Indirect object with the verbs/bring/buy/get/leave/fetch/make/
 - a. preceding the direct object, e.g. He bought them some food.
 - b. restated in the structure direct object + for + indirect object, e.g. He bought some food for them.
3. Expansion of the nominal group by the addition of preposition + complement/infinitive, e.g. The fisherman in the canoe was the first man to return.

4. Sentences with improbable conditions. (If/then type).
5. The range of structures that can follow find, i.e.
 - a. direct object.
 - b. indirect object.
 - c. direct object + for + indirect object
 - d. Nominal + adjective.
 - e. Nominal + past participle.
 - f. Nominal + nominal
6. Order of adjectives, e.g. white cotton shirts.
7. The use of and between two adjectives following is/are, e.g. a yellow linen scarf that's big and rough.
8. The Present Perfect Tense with future time reference after until and when.
9. Revision of the range of structure that can follow make
 - a. Direct object.
 - b. Nominal + Infinitive without to, e.g. The boys made the goats leave the compound.
 - c. Nominal + Adjective.
 - d. Indirect Object + Direct Object.
 - e. Direct Object + for + Indirect Object.
10. Prepositional verbs that take an object after the preposition, e.g. Everyone laughed at him.
11. Further expansion of nominal groups, e.g. my sister's maths textbook is on the table.
12. The prefixes un- and re-.
13. Verbs which take two prepositions - /look forward to/get on with/look down on/put up with/.
14. The use of phrasal verbs forms with/put/ - /put forward/put in/put up/put over/, etc.
15. The use of /both . . . and/ /both of us/.
16. The use of /neither//nor/ and /neither of/.
17. The use of auxiliary verbs to avoid the repetition of the main verb, e.g. Do you think he can get there? I expect he can.
18. Sequence of tenses with
 - a. as soon as + Present tense + Future.
 - b. every time + Present tense + Present tense.
 - c. The last time + Past tense + Past tense.
 - d. after + Past Perfect tense + Past tense.

APPENDIX A2

SAMPLE OF KISWAHILI LANGUAGE SYLLABUS

SYLLABUS-PRIMARY I

The main aim of the first year's work is to train the child to hear and speak very simple Kiswahili words and sentences and to help him to recognize and read written words and sentences. He also begins to acquire some skill in writing Kiswahili words. The material to be covered during the first year will be based on vocabulary of familiar situations likely to interest the child and involve him in speaking Kiswahili.

Simple stories, actions and games can be made up to give children enjoyable practice in hearing and speaking simple Kiswahili words.

Oral Work

- Naming of things and actions
- Describing things and actions
- Greetings, phrases, jingles, rhymes and songs.
- Associated word groups, e.g. names of fruits, pieces of furniture.

Pre-Reading

In this stage material is mainly pictorial. The child learns to see and interpret flat representations of familiar objects such as houses, pots and tools. He also learns to distinguish differences in size, shape arrangement and colours. Some pictures should be designed to lead his eye

from left to right and from the top of a page downward as in reading. Much practice with the shapes and sounds of words, on matching words with pictures and on reading of labels is essential.

Reading

After a suitable amount of oral work and pre-reading activities, the first steps in reading can be taken:

- The illustrated written word (Look and Say words).
- The illustrated sentence (Look and Say sentences).
- Sounds or syllables in the most frequently used common words (this is not to be overemphasized).

[NB: The section for Primary 1 goes on to describe hand-writing lessons, writing alphabetic letters, word tracing, etc. It also details for the teacher the types of materials that should be used for reading and writing lessons. The section of the syllabus for Primary 2 is essentially an expansion of what is taught during Primary 1. Beginning in Primary 3, much of the class time stresses oral work. Here, specific grammatical properties of the language are introduced and tutored. This continues throughout. The syllabus is designed to cover the curriculum only up through Standard 6. A sampling of Standard 6 follows.]

PRIMARY VI

Oral

The amount of oral work in this class is still much more, this is so because a student should learn to say things in Kiswahili before he tries to write them. More training is given to students to enable them to speak in public. This is done by spending about five minutes at the beginning of the lesson whereby a student is encouraged to give a short speech which he has written himself and then memorized it, so that what he says to the class is said in correct Kiswahili. Remedial work on sounds and intonation should be arranged whenever the teacher feels there is a need, particularly during the first few weeks of the year.

During oral work new language structures will be taught and the class will have plenty of opportunity to practice them. Meaning of words and word structures will be taught during oral exercises. Most of the work will be taken from the Pupils' Books and may be in the form of exercises designed to drill the class on grammar or answering questions to test the student's comprehension.

Reading

Sometimes the reading should be done by the teacher. In such cases the teacher will read the story aloud to the class while students follow along in their books. This should be followed by different students reading aloud different sections. While they do so the teacher should pay

special attention to their intonation, that is to the way each student's voice rises and falls as he speaks.

When the students are required to read the story silently, the teacher should walk around and help the poor readers. After the class has finished reading silently, the teacher may lead the class to discuss the material read and also to give other examples which support the information or show that things have changed since the story was written, and so on.

Written

Some time should be spent by the students writing the speeches they will give to the class (see Oral above). The teacher should help the children with their problems. Most of the written work will be based on the Pupil's Book, but occasionally the teacher will need to supplement it with his own exercises.

During the third term the teacher should revise the four year work with the class. In order to make this work enjoyable, a lot of planning before the term begins is very essential. One way of planning ahead is to begin building up right from the first term structures and grammatical items which the majority of the class find difficult. The work to be revised should be arranged systematically to avoid repeating the same work at a later stage, that is, work on adjectives should all be done together rather than mixing it with verbs. As soon as an item has been revised,

the class should be given plenty of exercises to do and also to connect this work with individual reading. Have the students collect as many examples as they can from their private reading.

The work which was started two years ago during the fifth period should be continued and the teacher should, in this connection, encourage the students to use correct expressions.

ITEMS TAUGHT OR REVISED IN PRIMARY 6

Sentence Structure

Word Structure

1. Angali anashona

Relative prefixes

Kingali kichafu

-ye- -o-

kilichovunjika

isiyolimika

2. Alikuwa yuko

sawa na

Neg. Infinitive

Ada nitampiga mimi

juu kwa juu

prefix: kuto-

si yangu,

moja kwa moja

kalamu hii

3. Kesho nitalima kulala fofofo Tense Prefixes
 shamba
 Kuimba niliimba nukta saba hivi mwanamaji
 mbwa mwitu mfanaya iliyo
 mfanya biashara wasio
 mwanawe
 mwendesha gari
4. Nenda kazilete kila arukapo U Class
 kila akipata U-N Class
 U-Ma Class
 kisanduku
 Nenda kamwambie Huku unapopangusa kijiti
 John vumbi vijinyama
 jumba
 jitu
 Hali anasumbuliwa
5. Ilimlazimu kutoka kwetu
 yanibidi kulipa
 inampasa kuwatunza
 sina budi kulipa
 Hana hiari ila kwatunza
 Ni sharti wawazuie

6. kiki hiki Impersonal
subject
papa hapa prefix: i-
aliye na pesa
7. Pamba hupitishwa
kunako mashini palipo no noun prefix:
-ji
Na twende sasa mahali pa Watambuaaji
Yu tayari zi karibu
naye roho yake i
wapi mimi niliopo tense prefix:
-sipo-
8. Kule kumekufa mpaka kuwe usiku alikuwapi
ng'ombe
Nimeibiwa kitabu tangu mfike hapa nilikuwako
watu waliokuwako yalikuwaje
awepo
palipokuwapo
aliomo

- | | |
|-------------------------------|----------------|
| 9. Naona mtu mwenye maarifa | Tense prefixes |
| ni kama mtu mwenye shoka | -nge- |
| Nikimwona Yohana, nitamsalimu | -singe- |
| | -ngali- |
| Ingawa yu mtoto | |
| karibu kufa | |
| nusura kufa | |
| kwa habari ya | |
| kwa maana ya | |
| 10. Ijapokuwa atapigwa | Noun suffixes |
| sindano, hataogopa | -zi |
| Watachezea Tamen | -shi |
| Kalamu yataka kuandika | -i |
| walifanyaje | Verb suffices |
| unakaapi | -ia -lia |
| | -ea -lea |
| mfinyanzi | |
| utafanyani | |
| 11. lipi, yapi | Verb suffices |
| | -sha |
| | -isha -lisha |
| | -esha -za |
| | -iza -eza |

12. Serikali haingemtambua

Akawa ataka kuandika

ubaoni

Relative prefixes

alichokisoma

kabla hajafika

Noun suffixes

-o -ka

-ika -eka

-lika -leka

subject prefixes

object prefixes

13. Huenda ikapotea

Huenda akapata hasara

mwisho

mashindano

mikutano

malisho

mbegu ziotazo vizuri

mtoto mwenye nguo

safi

uharibifu

Noun Suffixes

mitume

-ifu -lifu

kusafiri-safari

-efu -vu

-evu -e

-a

PRIMARY VII

The work in this class will mainly be revision of work covered during the last two years of learning and completing any items not covered in Std. VI. Since Masomo ya Kiswahili course books do not cover Std. VII in the new Syllabus, and until a suitable course book is produced for this class, pupils will read "Mfalme na Majitu" in the first term and "Hadithi za Kale" in the second and third terms as class readers. In addition to other books they may read in the library, they will also read "Hadithi Zenye Mafunzo" to increase their vocabulary and arouse interest in reading. [NB: any changes in the Syllabus that have resulted from the extension of primary schooling from 7 to 8 Standards as well as having Kiswahili included as an examinable subject were not available to the author at the time of this writing.]

Oral

More emphasis will be given to correcting pupils intonation, pronunciation and expression, because it is at this stage that they should be able to express themselves clearly and fluently in the language. Also more exercises in free sentence formation practice in class speeches will be an encouragement.

Extensive Reading

New words should be learnt in the context in which they are used. The first few minutes of any one lesson should be

spent on discussion of new words and their usage. The teacher will then have the class read the story silently while he walks around helping the slower readers. Occasionally he will read the stories aloud to the pupils to arouse their interest followed by individual pupils reading sections of the stories in turn.

Intensive Reading

Pupils should be encouraged to read more library books privately to increase their vocabulary and enjoyment in reading. They should discuss difficult words and phrases with the class teacher during oral lessons. They should also be encouraged to make a list of these words and phrases in their class exercise books for future reference.

Written

Most of the work will be exercises on written speeches, comprehension and grammar, compositions (original, imaginative and guided), letter writing, stories (fictitious and factual), precis, articles in magazines and newspapers, club activities, local activities, etc. The class teacher should correct the pupils written work and occasionally go over it with class or individual pupils pointing out common mistakes in language usage and grammar, expressions and paraphrasing.

APPENDIX B

CITY COUNCIL EXAMINATIONS
SAMPLES FROM STANDARDS 5, 6 AND 7
NAIROBI CENTRAL DIVISION

Examples from exams administered
at the end of the 1984 school term.

Standard Seven

Sample English Exam

Read the passage below. It contains blank spaces numbered 1 to 12. For each blank space, choose the best of the four answers given.

Long ago, the 1 held a general council to consider what measures they 2 to outwit 3 common enemy, the cat. Some said this, and some said that, but at last a young mouse got up and said he had a proposal 4, which he thought 5 the case. "You will all agree," said he, "that our chief danger consists in the sly and treacherous manner in 6 the enemy 7 us. Now, if we could 8 some signal of her approach, we could easily escape from her. I venture, therefore, to propose that a small bell be procured, and attached by a ribbon 9 the neck of the cat. By this means we should always know when she was about, and could 10 retire while she was in the neighborhood."

This proposal met with general applause, until an old mouse got up and said: "That is all very well, but who is to bell the cat?" They all looked at one another and 11 spoke. Then the old mouse said: 12.

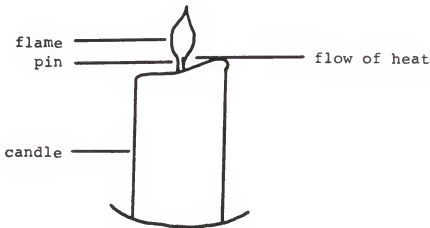
- | | | | |
|------------------|---------------|---------------|--------------|
| 1. A) mouse | B) mices | C) mice | D) mouses |
| 2. A) could take | B) will have | C) would take | D) had taken |
| | taken | | |
| 3. A) there | B) their | C) they | D) this |
| 4. A) to do | B) to give | C) to make | D) to say |
| 5. A) will meet | B) would meet | C) has met | D) was meet- |
| | | | ing |
| 6. A) how | B) what | C) which | D) what way |
| 7) A) approaches | B) will | C) is | D) has |
| | approach | approach- | approached |
| | | ing | |
| 8) A) receive | B) receive | C) recieve | D) see |

- 9) A) round B) on C) by D) around
- 10) A) easy B) most
 easily C) never D) easily
- 11) A) everybody B) all C) nobody D) anybody
- 12) A) "It is easy to propose impossible remedy."
 B) It is easy to propose impossible remedies.
 C) "It is easy to propose impossible remedies"
 D) "It is easy to propose impossible remedies."

Standard Five
Sample Science Exam

Answer all the questions as shown below

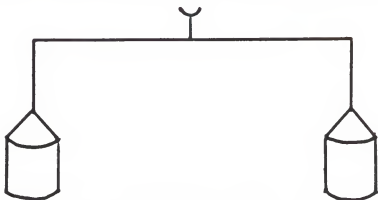
- 1) All things which can breathe, feel, feed and drink are said to be _____.
- 2) The covering of _____ with dry leaves and grass is known as mulching.
- 3) Flowering plants are plants which bear _____.
- 4)



In the above diagram heat travels through the pin by _____.

- 5) The natural source of heat is the _____.
- 6) The capacity (weight) of our school milk packet is _____ decilitres (dl).

- 7) What kind of balance is this? _____.

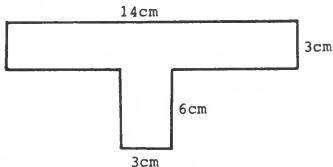


- 8) In hot climates people prefer _____ clothes because they are more comfortable and are heat reflectors.
- 9) The sign of goitre is that the patient has a _____.
- 10) Venus, the brightest of all the planets is also called the _____ star.
- 11) There are three states of matter and air is an example of a _____.
- 12) Feathers on birds help to retain _____.
- 13) The moving air which is caused by the change of temperature is called _____.
- 14) Which is the most nutritious fruit?
a) paw-paw, b) avocado pear, c) mango, d) orange
- 15) We had learnt in our previous science lessons that sugar is made up of carbon and water and substances made up like this are called _____ or energy-giving foods.
- 16) The instrument below is used to measure _____.
- 17) What is the name of the instrument? _____.

Standard Five
Sample Maths Exam

- 1) A car travels for 3 hours at a speed of 75 km per hour.
What distance does it cover? _____.

- 2) What is the area of this figure?

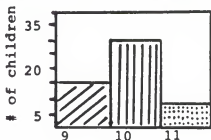


- 3) Write $\frac{18}{24}$ in its simplest form.
- 4) A shopkeeper brought 27 crates each containing 24 packets. How many packets did the shopkeeper buy?
_____.

- 5) The perimeter of a rectangle is 28 cm. If the length of the rectangle is 8 cm, what is its width?
_____.

- 6) 2322 divided by 27 = _____.

- 7) The graph shows the number of children of different ages in a class. Use it to answer questions 8 and 9.

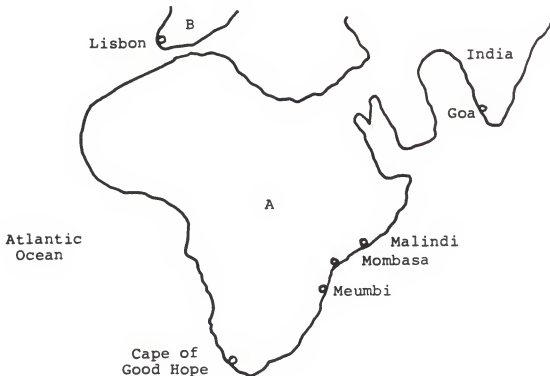


- 8) How many children are aged 9 years? _____.
- 9) How many children are there in the class? _____.

Standard Five
Sample History Exam

- 1) The Nyamwezi, the Hehe, the Chagga and the Yao are all _____ living in Tanzania.
- 2) In the past, people did not have money. They traded by _____.
- 3) The main thing which made the Portuguese to find the sea route to India was because they wanted _____.
- 4) The Hammerton Treaty was signed in the year _____.
- 5) The tax paid for passing through a country was known as _____. Mirambo and Nyungu ya Mawe used to receive this type of tax.
- 6) The rulers of Mombasa belonged to the _____ family.

Use the map below to answer Questions 7-8



- 7) A shows the map of _____ and B is one of the European countries called _____.
- 8) In 1487 _____ sailed from the country marked B and reached the Cape of Good Hope.

Write true or false: (For Questions 9 and 10 only)

- 9) An Archaeologist is a person who studies ancient remains _____.
- 10) Long ago, Buganda was ruled by tribal kings. Buganda called their King Maingi _____.
- 11) Ibn Batuta was a famous: a) sailor, b) explorer, c) geographer.

Standard Five
Sample Kiswahili Exam

I) Andika maneno haya kwa wingi:

1. Wimbo _____
2. Unga _____
3. Kalamu _____
4. Sukari _____
5. Nguo _____
6. Kiwanja _____
7. Mwalimu _____
8. Mtoto _____
9. Kitanda _____
10. Ndege _____

II) Andika kinyume cha maneno haya:

1. Mama _____
2. Msichana _____
3. Bwana _____
4. Juu _____
5. Nje _____
6. Ubaya _____
7. Tamu _____
8. Giza _____
9. Dume _____
10. Mwanamke _____

III) Chagua neno moja kukamilisha sentensi zifuataza:

damu, farasi, nyani, samaki, mwalimu, ndugu yako,
gari la moshi, chako, chai, ndovu.

1. Alipanda mti kama _____
2. Unaandika maka _____
3. Alikimbia kama _____
4. Rangi hiyo ilikuwe nyekundu kama _____
5. Yusufu aliogelea kama _____
6. Napenda kwenda kwa motokaa kuliko kwa _____
7. Twiga ni mrefu kuliko _____
8. Chakula changu ni kidogo kuliko _____
9. Kazi yako ni bora kuliko ya _____
10. Soda ni tamu zaidi kuliko _____

IV) Chagua neno moja kukamilisha sentensi zifuatazo:

1. Huyu ni mtoto _____ Hamisi (wa, ya, za)
2. Hii ni kaptula _____ mvulana yule, (la,
wa, ya)
3. Mama alivunja vikombe _____ jikoni (za,
vya, ya)

Standard Six
Sample English Exam

For each of the following sentences chose the words needed to complete the sentences correctly:

1. You cannot live without _____
a) to eat b) having eaten c) eating d) eat
2. Mary asked Ann if she _____ a cup of tea.
a) likes b) liked c) like d) liking
3. Please _____ this cloth on the table.
a) lie b) sit c) lay c) laid
4. The man arrived after I _____ a letter.
a) has written b) will write c) had written
d) have written.
5. Our team was _____ by that one.
a) beaten b) bite c) beating d) beat

Complete each sentence with another word, formed from the word in Capital letters:

6. CATCH: I _____ a cold at the party.
7. EXPLAIN: He listened patiently to his teacher's _____.
8. CHOOSE: Purchasers have a _____ of several colours.
9. MISCHIEF: Rehema has always been a _____ girl.
10. MARVEL: The tourist gazed at the _____ scenery.

Fill in the blanks with 'a', 'an', or 'the':

11. She has always been _____ attentive pupil in the class.
12. He used to smoke _____ packet of cigarettes every day.
13. Jane's mother sifted _____ flour first before she broke the egg into a bowl.
14. Amka has _____ enormous appetite for meat.
15. I gave _____ old clothes to a family living nearby.

Complete the following common proverbs and similes by choosing the correct word from those given:

16. People who live in _____ houses should not throw stones.
a) new b) glass c) rented d) old e) poor.
17. Make _____ while the sun shines.
a) harvest b) hay c) summer d) holiday e) merry
18. The proof of the _____ is in the eating.
a) food b) pudding c) bread d) cake
19. Sight is to telescope as speech is to _____.
a) audience b) telegram c) letter d) microphone
20. Us is to we as _____ is to she.
a) her b) hers c) him d) he

Standard Six
Sample English Exam
Reading Comprehension

Read the following passage carefully and then answer the questions below:

Old Amos kept a tiny shop at the end of the village, and at the back of the shop there was a small yard full of long grass. But the grass was not everywhere. There was one circle of completely bare ground. And in the centre of this circle there was a peg, to the peg was attached a rope and to the rope was attached a handsome goat.

Amos himself was a strange man. Most of the time he worked hard and he was a popular shopkeeper. He was a cheerful person and behaved with great gentleness to man and beast, and for this he was very well liked.

But poor Amos, when he was drunk, became a different person. For then he behaved like a madman. You could see him then racing down the street in his little donkey-cart, whipping his donkey unmercifully to make it go faster. People were sensible enough to keep out of his way when he was in this state. His wife in particular had a very good reason for hiding from him at such times. This was because when the drink was in him, and for no other reason at all, he used to want to shoot her. With drunken clumsiness, while he was searching for his shotgun, she used to run to a neighbor's house and remain there until he became himself again.

On one of these occasions when Amos had found his gun but not his wife, he was enraged and so determined to shoot something that he staggered out to the yard at the back of his house and shot the goat!

Yet, many years later, when Amos was dead his widow used to shake her head sadly and say: "Oh, I do miss Amos. I miss him so much. You see, he was always so good to me."

- 1) There was a circle of bare ground in the yard because?
- a) Goats walk round in circles.
 - b) Amos cut down the grass.
 - c) The goat had eaten the grass.
 - d) Amos moved the peg each day.

- 2) "Because a different person" means that Amos?
 - a) disguised himself as someone else.
 - b) behaved differently.
 - c) approached someone else.
 - d) changed places with his neighbor.
- 3) People avoided Amos when he was drunk because?
 - a) He was like a madman.
 - b) He wanted to shoot his wife.
 - c) He beat his donkey.
 - d) He was going to shoot his goat.
- 4) He shot that goat because?
 - a) He was going to have a feast.
 - b) He was annoyed that the donkey would not go faster.
 - c) He did not want the goat to eat any more food.
 - d) He could not find his wife.
- 5) Amos' widow missed her husband because?
 - a) He shot the goat for a feast.
 - b) She thought he treated her well.
 - c) He did not succeed in shooting her.
 - d) He was a good shopkeeper.

[NB: Examples of science, math and history exams were not available for inclusion in appendices for Standard Six.]

Standard Six

Sample Kiswahili Exam

- 1) Kamilisha sentensi zifuatazo kwa kutumia neo - "angali".

Kwa mfano: Mama _____ anashona

Mama angali anashona.

1. Vitambaa _____ vichafu.
2. Watoto _____ wagonjwa.
3. Chungwa _____ bichi
4. Kikapu _____ tupu.
5. Madirisha _____ wazi.

- 2) Andika wingi wa maneno haya

- | | |
|-------------------|------------------|
| 6. mwimbaji _____ | 11. chumba _____ |
| 7. Mwana _____ | 12. jibu _____ |
| 8. mwenyeji _____ | 13. jitu _____ |
| 9. chombo _____ | 14. ulimi _____ |
| 10. kiini _____ | 15. uso _____ |

- 3) Soma shairi lifuatalo halafu ujibu maswali

Mwanangu waenda nchi za mbali,
Basi itumie sana akili.
Mimi nataka kukupa wasia,
Ili uweze kukusadia.

Mambo ya dunia hii ni mengi,
Rafiki wasiri ndio msingi,
Usijiunganishe na walevi
Wala usifuatane na wezi.

Mambo ya usherati sitaki,
Wala mzaha, bali ni haki.
Rafiki wengi hukuchangamsha,
Bali hukuacha pesa ziliisha.

Usijifanye u mwerevu sana,
Marafiki watakuguna.
Wala usijifanye juha,
Usije ukalosa furaja.

Ukikaribishaw nyumbani mwa mtu.
Upaka sana kuwa mtukutu.
Ukiketewa chakula mezani,
Tazama wenyeji mwao nyusoni.

Katika matembezi ya usiku
Jihadhari kwa hiki na huku,
Usiende hata ujue hasa
Kuna sababu inayokupasa.

Maswali

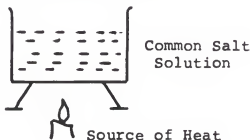
- a) Kichwa cha shairi hili ni _____.
- b) Katika ubeti wa pili mtoto yuwaonywa, asijiunganishe na _____ na sifuatane na _____.
- c) Mtoto huambiwa _____ ndio wazuri.
- d) Katika ubeti wa watatu msitari wa nne, mtoto hiambiwa rafiki hukuacha wakati gani? _____.
- e) Kwa kuelewa kwako juu ya shairi hili, mwandishi ameandika kama:
 - A) Baba wa mtoto wa kike
 - B) Kama baba wa mtoto wa kiume.
 - C) Mama wa mtoto wa kiume
 - D) Mama ana mtoto wa kike.

Standard Seven

Sample Science Exam

- 1) Three farmers, A, B and C planted maize in their plot at different times. Farmer A planted his earlier and so was ready long before B and C. Which of the following is the most disadvantageous of his maize crops growing earlier?
- A) The thieves would steal.
 - B) The birds and animals would eat them.
 - C) Many people would come to borrow as they wait for theirs to grow.
 - D) He would eat and finish this maize before other two.

2)



In the experiment above a child is trying to

- A) find out which substances are soluble in water.
 - B) distill common salt.
 - C) recover the dissolved solid from a solution.
 - D) find out whether common salt dissolves in water.
- 3) Plumule and radicle are parts of a germinating seed. Which one of them grows first? _____
- 4) A school boy who suffers from anemia should be fed with food which contains _____.
- 5) Salt is mixed with water and then put under the sun. After some time dry salt is collected. This happens due to _____.



- 6) The leaf above is most likely to be of a
- a) sugar cane b) Oil Palm tree c) Mango tree
 - d) banana plant.

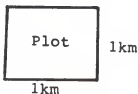
7) Which of the following methods is not good for soil conservation?

- A) regrassing B) reforestation C) overgrazing
D) contour ploughing.

Standard Seven
Sample Maths Exam

Instructions: Do all the rough work on the paper provided then write your ANSWERS on the separate Answer sheet:

- 1) Which of the following numbers is six million six thousand and six?
A) 600060006 B) 66006 C) 600000060006 D) 6006006
- 2) What is $251 + 0.32 + 4 + 0.6$?
A) 251.42 B) 255.92 C) 255.38 D) 3.47
- 3) Find the next number in the series.
2, 1, 3, 2, 4, 3, 5
A) 6 B) 8 C) 4 D) 3
- 4) A sugar factory produced 540 tons of sugar in one week. The sugar was to be packed in 90 kg bags. How many bags were needed?
A) 6 B) 60 C) 600 D) 6000
- 5) A lorry is carrying 809 cartons of Omo Soap. If each carton contains 48 packets, how many packets is the lorry carrying?
A) 38832 B) 9708 C) 957 D) 36732
- 6) Find the value of $a^2 + b^3$ if $a = 5$, $b = 3$.
A) 19 B) 34 C) 40 D) 52
- 7) How many buses each carrying 52 passengers can carry 650 passengers at a go?
A) $12 \frac{1}{2}$ B) 33800 C) 598 D) 13
- 8) How many $\frac{1}{4}$ litre bottles can be filled from a tine whose capacity is $5 \frac{1}{2}$ litres?
A) $1 \frac{3}{8}$ B) 22 C) 20 D) 44
- 9) What will be the new place value of the digit 8 after dividing 8798.2 by 1000?
A) thousands B) ones C) tenths D) ten thousands
- 10) The figure shown represents a square plot of side 1 km. What is its area in hectares?



- A) 100 B) 1000 C) 10000 D) 10

Standard Seven
Sample English Exam

Use the correct verb.

1. Never _____ such a song.
A) I have heard B) I hear C) have I heard D) hear
2. Have you _____ the watch?
A) wind B) wounded C) wound D) winds
3. No sooner _____ he eaten than the bell rang.
A) has B) will C) had D) could
4. Complete the series MOO,000, QOO, _____.
A) SO, B) SOO C) ROO D) RO
5. TAR is to RAT as NO is to _____.
A) YES B) ON C) ONE D) WON
6. In a certain code BTLLSBBMTV means successful. Which of the following words in code would be the word full?
A) MTVL B) LBBV C) MTVV D) Can't write
7. Using the same code, which would be the word false?
A) MSVBT B) MTVBB C) VTMBB D) Can't write

Use the following information to answer Question 8 to 12.

Five sisters go shopping. They are Mary, Jane, Agnes, Patricia and Pamela. Mary buys soap, Agnes and Pamela buy crockery. Pamela buys a hat for her husband, Agnes buys a shirt for her son. Jane, Agnes, Patricia also buy sugar, Mary and Jane buy fruit. Agnes and Patricia buy skirts.

- 8) How many women are married?
A) 3 B) 2 C) 5 D) can't tell
- 9) Who are they?
A) Pamela, Agnes and Jane
B) Agnes and Pamela
C) Jane
D) Can't tell
- 10) Who buys crockery, sugar, shirts and skirts?
A) Agnes B) Patricia C) Jane D) Pamela
- 11) Who buys only one item?
A) Pamela B) Jane C) Patricia D) Can't tell
- 12) Who buys a shirt and sugar only?
A) Agnes B) Patricia C) Pamela D) Jane

Standard Seven

Sample English Exam - Composition

The first few sentences of the story have been given. Complete the story in our own words in the way you think best.

It was Saturday afternoon. We had just finished eating our lunch when there was a knock at the door. My father asked me to open the door. On opening it, I found our neighbor standing outside it. He looked very worried and upset, and asked me, "Have you seen our little Peter? He has been missing from home since morning."

[NB: Standard Seven History exam as not available for inclusion in appendices.]

Standard Seven

Kiswahili Exam

Jibu maswali yote. Majawabu yote yaandikwe katika karatasi hii tu, Baba yangu _____ watoto wengi.

- A) kama B) lina C) ana D) wana

I. Hebu soma haya kwa uangalifu halafu ufanye kama ulivyoielezwa.

Chagua kati ya maneno haya (a) mpaka (d) ni lipi linalofaa kuunganishwa na fungu kufanya sentenso kamili yenye maana, na iandike herufi yake katika kisanduku. Neno lililo sawa "ana"; basi itie herufi yake (c) katika kisanduku.

Sasa na wewe fanya vivyo hivyo kwa mafungu yafuatayo:

- 1) Ng'ombe _____
A) zangu wanaumwa B) zangu zinaumwa C) wangu zinaumwa
D) wangu wanaumwa
- 2) Mgonjwa _____ dawa yake jana.
A) hanywi B) hayanywa C) hakunywa D) hajanywaga
- 3) Ungekula kidogo _____ njaa.
A) usingelisikia B) usingesikia C) usingalisikia
D) msingelisikia
- 4) Asingalikuwa mwivi _____ mashaka.
A) hawangemtilia B) hawangalimtilia C) hawangalitilia
D) hangemtilia

- 5) Wakati wote aingiapo _____ mlango.
A) habishi B) hakubisha C) habishagi D) hajabisha
- 6) Hapo ndipo alipofunua chungu _____ nyama.
A) akidokoa B) akadokoa C) alidokoa D) anadokoa
- 7) Hamjapata Kuonana? _____
A) Ndiyo tumepata kuonana B) La, hatujapata kuonana
C) Ndiyo twaonana D) Mdiyo, hatujapata kuonana
- 8) Umeonana naye? _____
A) La nimeonana naye B) Ndiyo sikuonana naye
C) Hatujapata kuonana naye D) La, sikuonana naye
- 9) Hali gani? _____
A) Nina hali yangu B) Mzima C) Vizuri D) Sawa tu
- 10) Hujambo? _____
A) Salama B) Ahsante C) Mambo bam bam D) Sijambo

APPENDIX C

TSA-E: ENGLISH VERSION ADAPTED FROM
TSA SCREENING TEST

Part 1: Recognition

1.
 - A. The shoes weren't in the box.
 - B. The shoes not were in the box.
 - C. The shoes weren't not in the box.
 - D. Not the shoes were in the box.
2.
 - A. The cat had an babies.
 - B. The cat had a babies.
 - C. The cat had some babies.
 - D. The cat had the a babies.
3.
 - A. Who the boy found the book?
 - B. Who found the book?
 - C. Who he found the book?
 - D. Found who the book?
4.
 - A. The noise of the lion scared the children.
 - B. The noise the lion scared the children.
 - C. The noise to the lion scared the children.
 - D. The noise of the lion scare the children.
5.
 - A. Not the elephant is a small animal.
 - B. The elephant is not a small animal.
 - C. The elephant is a small animal no.
 - D. The elephant not is a small animal.
6.
 - A. Mary was sewing not the dress.
 - B. Mary not was sewing the dress.
 - C. Mary wasn't sewing the dress.
 - D. Mary did was not sewing the dress.
7.
 - A. We don't walk to school.
 - B. We not walk to school.
 - C. We not do walk to school.
 - D. We do not walk to schoool.
8.
 - A. Mother sewed a dress. An the dress was white.
 - B. Mother sewed a dress. A dress was white.
 - C. Mother sewed a dress. A the dress was white.
 - D. Mother sewed a dress. The dress was white.
9.
 - A. The little boy no can not write.
 - B. Not the little boy can write.
 - C. The little boy not can write.
 - D. The little boy can not write.

- 10.
- A. The little girls played.
 - B. Little the girls played.
 - C. A little girls played.
 - D. The some little girls played.
- 11.
- A. Mother looked at a the moon.
 - B. Mother looked at moon.
 - C. Mother looked at a moon.
 - D. Mother looked at the moon.
- 12.
- A. The baby will sit at the table tomorrow.
 - B. The baby at the table tomorrow.
 - C. The baby sit at the table tomorrow.
 - D. The baby will sat at the table tomorrow.
- 13.
- A. The boy would not read the story.
 - B. The boy not read the story.
 - C. The boy no would read the story.
 - D. The boy would no read the story.
- 14.
- A. John has an new blue shirt.
 - B. John has shirt a new blue.
 - C. John has a new blue shirt.
 - D. John has new a blue shirt.
- 15.
- A. The girls did had not found the book.
 - B. Not the girls found the book.
 - C. The girls not had found the book.
 - D. The girls hadn't found the book.
- 16.
- A. Mother has a big black pans.
 - B. Mother has an big black pan.
 - C. Mother has big black pan.
 - D. Mother has a big black pan.
- 17.
- A. You seem tired not.
 - B. You not seem tired.
 - C. You do not seem tired.
 - D. You seem no tired.
- 18.
- A. The man has an brown coat.
 - B. The man has a brown coat.
 - C. The man has a brown coats.
 - D. The man has brown a coat.

19.
A. Mother walked a home.
B. Mother walked home.
C. Mother walked the home.
D. Mother walked an home.
20.
A. The dog has some of food.
B. The dog has an food.
C. The dog has a food.
D. The dog has some food.
21.
A. Tom watched the men to work.
B. Tom watched the men work.
C. Tom watched the men to working.
D. Tom watched the men worked.
22.
A. You do the exercises?
B. Did you do the exercises?
C. You done the exercises?
D. Did do you the exercises?
23.
A. I in the park last Sunday.
B. I sit in the park last Sunday.
C. I am sat in the park last Sunday.
D. I sat in the park last Sunday.
24.
A. The boy heard to the laughter of the girl.
B. The boy hearing the laughter of the girl.
C. The boy heard the laughter of the girl.
D. The boy heard the laughter the girl.
25.
A. John found the kittens.
B. John found a kittens.
C. John found a the kittens.
D. John found an kittens.
26.
A. The work of the men surprise the woman.
B. The work to the men surprised the woman.
C. The work the men surprised the woman.
D. The work of the men surprised the woman.
27.
A. Some of the cats were black.
B. Some of the cat were black.
C. Cats the some of were black.
D. Some the cats were black.

28.
A. When did Asha walk to the farm?
B. Asha walk to the farm when?
C. When to the farm did Asha walk?
D. Bob found some a water.
29.
A. Bob found a water.
B. Bob found some water.
C. Bob found some of water.
D. Bob found some a water.
30.
A. What will I feed the kittens?
B. What will I feed the kittens milk?
C. What will I fed the kittens?
D. What the kittens will I feed.
31.
A. Mother made some a bread.
B. Mother made a bread.
C. Mother made some bread.
D. Mother made an bread.
32.
A. John saw the start the game.
B. John saw the start of the game.
C. John saw to the start of the game.
D. John seeing the start of the game.
33.
A. The woman is cooking food.
B. The woman cook food.
C. The woman is cooked food.
D. The woman has cooking food.
34.
A. Mary saw to John helped the lady.
B. Mary seeing that John helped the lady.
C. Mary saw that John helped the lady.
D. Mary saw for John helped the lady.
35.
A. The dancing of the girl was funny.
B. The dancing the girl was funny.
C. The dancing at the girl was funny.
D. The dancing of the girl funny.
36.
A. Mary liked to the running of the girls.
B. Mary liking the running of the girls.
C. Mary liked the running the girls.
D. Mary liked the running of the girls.

- 37.
- A. The man said to Ali played the game.
 - B. The man said that Ali played the game.
 - C. The man saying that Ali played the game.
 - D. The man said for Ali played the game.
- 38.
- A. Should you should go to bed?
 - B. Did you should go to bed?
 - C. Should you went to bed?
 - D. Should you go to bed?
- 39.
- A. Juma liked the telling of the stories.
 - B. Juma liked the telling the stories.
 - C. Juma liking the telling of the stories.
 - D. Juma liked to the telling of the stories.
- 40.
- A. The cows some of were sick.
 - B. Some of the cows were sick.
 - C. Some the cows were sick.
 - D. Some of the cow were sick.
- 41.
- A. The boys knew for the dog was lost.
 - B. The boys knew to the dog was lost.
 - C. The boys knew the dog was lost.
 - D. The boys knowing that the dog was lost.
- 42.
- A. The writing the story was easy.
 - B. The writing to the story was easy.
 - C. The writing of the story easy.
 - D. The writing of the story was easy.
- 43.
- A. It was sad that the babies were hungry.
 - B. The babies was sad were hungry.
 - C. That was sad the babies were hungry.
 - D. The babies were hungry was sad.
- 44.
- A. The teacher told me where to sit.
 - B. The teacher told me where sitting.
 - C. The teacher told me where sit.
 - D. The teacher told me where to sitting.
- 45.
- A. Will Mary go?
 - B. Is Mary will go?
 - C. Will Mary went?
 - D. Will Mary will go?

46.
A. I saw mother to came.
B. I saw mother to coming.
C. I saw mother to come.
D. I saw mother coming.
47.
A. I ran to the park to played.
B. I ran to the park for to play.
C. I ran to the park to play.
D. I ran to the park to playing.
48.
A. The boy was good at to spell.
B. The boy was good at spelling.
C. The boy was good at spell.
D. The boy was good at to spelling.
49.
A. The baby was asleep surprised Father.
B. For the baby was asleep surprised Father.
C. So the baby was asleep surprised Father.
D. That the baby was asleep surprised Father.
50.
A. Mary likes ride to the bus.
B. Mary likes to riding the bus.
C. Mary likes to ride the bus.
D. Mary likes to rode the bus.
51.
A. The boys went to fished.
B. The boys went fish.
C. The boys went for to fish.
D. The boys went fishing.
52.
A. Mother wanted Sally to buying the bananas.
B. Mother wanted Sally to buy the bananas.
C. Mother wanted Sally buy the bananas.
D. Mother wanted Sally to bought the bananas.

Part 2: Recognition

53. As _____ waited, the boys told stories.
A. their
B. them
C. they
D. the boys

54. Mother said, " She sewed the dress by _____ "
A. himself
B. sheself
C. her
D. herself
55. John is reading a book and Mary _____
a newspaper.
A. read
B. was read
C. is reading.
D. reads
56. Mother cooked the eggs for me. They are _____
A. mine
B. her
C. theirs
D. ours
57. Father planted seeds for us. The flowers are
_____.
A. him
B. her
C. ours
D. us
58. Mother _____ the clothes and Father will buy
the shoes.
A. buy
B. will buying
C. will buy
D. will buys
59. John worked and Robert _____.
A. play
B. playing
C. played
D. are play
60. Asha called the girls _____ they ran away.
A. with
B. but
C. either
D. or
61. The plates were broken. I cut _____.
A. it
B. themselves
C. myself
D. me

62. The girls went to school. The baby played by _____.
A. it
B. themselves
C. yourself
D. itself
63. You thanked the teachers _____ helped Mary.
A. who
B. when
C. what
D. where
64. The little boy was lost. The girls told _____ mother.
A. him
B. her
C. his
D. them
65. Mary and Ann cooked the ugali. _____ friends cooked the meat.
A. Theirs
B. Her
C. Him
D. Their
66. When the girls came home. Mary went to see _____.
A. themselvs
B. the girls
C. him
D. them
67. I liked the food _____ Mother cooked.
A. which
B. what
C. who
D. whose
68. _____ Mother or Mary sewed the dress.
A. Both
B. With
C. Neither
D. Either
69. You took the goats _____ had black faces.
A. that
B. whose
C. when
D. where

70. After _____ mother cooked lunch, Ann washed the pans.
 A. she
 B. Ann's
 C. her
 D. hers
71. _____ John nor Mary came to the party.
 A. Neither
 B. Either
 C. Both
 D. But
72. We saw _____ Ali hid the book.
 A. that
 B. where
 C. which
 D. what

Part 3.

73. Father opened the door. Mother saw a man.
 A. Father opened the door Mother saw a man.
 B. Father opened the door saw a man.
 C. Father opened the door and Mother saw a Man.
 D. Father opened the door and a man.
74. The man walked into the house. The woman walked into the house.
 A. The man and woman walked into the house.
 B. The man walked into the house and the woman walked.
 C. The man walked into the house the woman walked into the house.
 D. The man woman walked into the house.
75. The boys made a table. The boys made chairs.
 A. The boys made a table made chairs.
 B. The boys made a table chairs.
 C. The boys made a table the boys made chairs.
 D. The boys made a table and chairs.
76. John opened the door. John closed the door.
 A. John opened closed the door.
 B. John opened the door John closed the door.
 C. John opened and closed the door.
 D. John opened John closed the door.

77. The women washed the clothes. The girls ironed the clothes.
A. The women washed the clothes and the girls ironed them.
B. The women washed and ironed the clothes.
C. The women washed the girls ironed the clothes.
D. The women washed the clothes the girls ironed them.
78. I hit the boy. The boy cried.
A. I hit the boy the boy cried.
B. I hit the boy cried.
C. I hit the boy and the boy cried.
D. I hit the boy and cried.
79. A goat kicked Asha.
A. Asha was kicked a goat.
B. Asha kicked by a goat.
C. Asha was kick by a goat.
D. Asha was kicked by a goat.
80. John was bitten by a snake.
A. A snake bit John.
B. John was bite by a snake.
C. A snake was bitten by John.
D. John bitten by a snake.
81. The cows were chased by a dog.
A. The cows chased a dog.
B. A dog was chased by the cows.
C. The cows were chased a dog.
D. A dog chased the cows.
82. We talked with the girl. The girl's friend went home.
A. We talked with the girl's friend went home.
B. We talked with the girl who her friend went home.
C. We talked with the girl whose friend went home.
D. We talked with the girl friend went home.
83. The children played with the girl. The girl wore a red dress.
A. The children played with the girl who wore a red dress.
B. The children played with who wore a red dress the girl.
C. The children played with who the girl wore a red dress.
D. The children played with the girl who the girl wore a red dress.

84. The bus was hit by a car.
A. A car was hit by the bus.
B. The bus was hit a car.
C. A car hit the bus.
D. The bus hit a car.

Part 4.

85. Should she go with Mother?
A. Yes, she should.
B. Mother should go.
C. If she is good.
D. Yes, she did.
86. Could Juma keep the book?
A. Yes, he did.
B. Yes, he could.
C. He will buy the book.
D. Juma keep the book.
87. How long did the boys play ball.
A. The boys played football.
B. all day
C. football
D. with a bat
88. Which are bigger, dogs or puppies?
A. dogs
B. baby
C. Dogs are small.
D. They are bigger.
89. Ali can't fix the toy, can he?
A. can't fix
B. can
C. No, he can't.
D. a toy car.
90. John knew that the children liked cats.
A. The cats liked children.
B. John liked cats.
C. The children liked cats.
D. John knew the cats.
91. It surprised the girls that the cats were chasing the dogs.
A. The girls were chasing the dogs.
B. The dogs surprised the girls.
C. The cats were chasing the dogs.
D. The dogs were chasing the cats.

92. Asha likes the dolly. It is not new.
A. The dolly is not old.
B. The dolly is old.
C. The dolly is new.
D. Asha does not like the dolly.
93. John knew the car hit the man.
A. The man hit John
B. John knew the car.
C. The car hit the man.
D. John hit the man.
94. Juma thanked the teacher and went home.
A. Juma went home.
B. The teacher went home.
C. The teacher thanked Juma.
D. Juma and the teacher went home.
95. The girl knew that the boy went to school.
A. The boy went to school.
B. The girl knew the school.
C. The boy knew the girl.
D. The girl went to school.
96. Ali liked the man who fixed the bicycle.
A. Ali fixed the bicycle.
B. Ali liked the bicycle.
C. The man liked the bicycle.
D. The man fixed the bicycle.
97. You saw the girls who Ann helped.
A. Ann saw the girls.
B. You saw Ann.
C. Ann helped the girls.
D. You helped the girls.
98. Ann or Mother sewed the dress.
A. Ann and Mother sewed the dress.
B. Either Ann or Mother sewed the dress.
C. Both Ann and Mother sewed the dress.
D. Neither Ann nor Mother sewed the dress.
99. Mary held the baby who Asha gave the milk to.
A. Mary held Asha.
B. Mary held the milk.
C. The baby gave the milk.
D. Asha gave the milk to the baby.
100. That John was chasing birds surprised Mary.
A. John was chasing birds.
B. Mary was chasing birds
C. Mary surprised John.
D. The birds surprised Mary.

101. The boys who made the fire for Mother brought the lunch.
A. The boys made the lunch.
B. Mother made the lunch.
C. Mother brought the lunch.
D. The boys made the fire.
102. The selling of the goat surprised Mother.
A. Mother sold the goat.
B. Mother surprised the goat.
C. The selling surprised Mother.
D. The goat surprised Mother.
103. Asha liked the running of the animal.
A. Asha liked the animal's running.
B. The animal liked Asha.
C. The running liked Asha.
D. The running liked the animal.
104. The crash of the cars frightened the children.
A. The cars frightened the children.
B. The crash frightened the children.
C. The children crashed.
D. The children frightened the cars.
105. The boy who Mary watched threw the ball.
A. Mary watched the ball.
B. The boy threw the ball.
C. Mary threw the ball.
D. The boy watched Mary.
106. The babies, who were tired, slept on the bed.
A. The tired babies were slept on the bed.
B. The tired babies slept on the bed.
C. The babies were tired slept on the bed.
D. The babies who the babies were tired slept on the bed.
107. The boy heard the crying of the woman.
A. The boy heard the woman's crying.
B. The woman heard the boy.
C. The crying heard the woman.
D. The crying heard the boy.
108. The work of the girl surprised Father.
A. Father worked.
B. The girl surprised Father.
C. Father surprised the girl.
D. The work surprised Father.

109. We carried the boys who were little.
A. We carried the boys little.
B. We carried the boys were little.
C. We carried the boys who the boys were little.
D. We carried the little boys.
110. The man who bought the cow from Father wore a brown coat.
A. Father wore a brown coat.
B. The man bought a brown coat.
C. Father bought a brown coat.
D. The man bought the cow.
111. The boys knew the man. The teacher gave the money to the man.
A. The boys knew the man who the teacher gave the money to.
B. The boys knew the man who the teacher gave the money to the man.
C. The boys knew the man who the teacher gave the money to him.
D. The boys knew who the teacher gave the money to the man.
112. The discussion of the exams worried Mary.
A. Mary worried the exams.
B. The discussion worried Mary.
C. Mary discussed the exams.
D. The exams worried Mary.
113. John watched the growth of the plant.
A. The growth knew John.
B. John grew the plant.
C. John watched the plant's growth.
D. The plant watched John.
114. I saw the children. The man talked to the children.
A. I saw the children to whom the man talked.
B. I saw the children to who the man talked to them.
C. I saw whom the man talked to the children.
D. I saw the children whom the man talked to.

APPENDIX D

TSA-S: KISWAHILI VERSION ADAPTED AND TRANSLATED
FROM THE TSA SCREENING TEST

Part 1: Recognition

1. A. Nguo sikuwa mfukoni.
B. Nguo hazikuwa mfukoni.
C. Nguo hazikuwa si mfukoni.
D. Nguo sizikuwa mfukoni.
2. A. Alipata nani kitabu kile?
B. Nani yeye alipata kitabu kile?
C. Nani mvulana alipata kitabu kile?
D. Nani alipata kitabu kile?
3. A. Ngurumo ya simba iliwatisha watoto.
B. Ngurumo ile simba iliwatisha watoto.
C. Ngurumo kwa simbani iliwatisha watoto.
D. Ngurumo ya simba kuwatisha watoto.
4. A. Si tembo mnyama mdogo.
B. Tembo si mnyama mdogo.
C. Tembo ni mnyama mdogo si.
D. Tembo si kuwa mnyama mdogo.
5. A. Si tunaendea shule kwa miguu.
B. Si hatuendi shule kwa miguu.
C. Sisi si kwenda shule kwa miguu.
D. Hatuendi shule kwa miguu.
6. A. Mtoto mdogo si anaweza haandiki.
B. Mtoto mdogo hawezi kuandika.
C. Si mtoto mdogo anaweza kuandika.
D. Mtoto mdogo si anaweza kuandika.
7. A. Wasichana wale wadogo walicheza.
B. Wadogo wale wasichana walicheza.
C. Wasichana mdogo yule alicheza.
D. Msichana mdogo wale walicheza.
8. A. Mama alitazama mwezi.
B. Mama alitazama mwezini.
C. Mama alitazama kwa mwezini.
D. Mama alitazama yule mwezini.
9. A. Mtoto mezani kwa chakula cha mchana wiki ijao.
B. Mtoto kukaa mezani kwa chakula cha mchana wiki ijao.
C. Mtoto atakaa mezani kwa chakula cha mchana wiki ijao.
D. Mtoto atakaa mezani kwa chakula cha mchana wiki iliyopita.

10. A. Mvulana yule hakutaka kusoma hadithi ile.
B. Mvulana yule si kusoma hadithi ile.
C. Mvulana yule si kutaka kusoma hadithi ile.
D. Mvulana yule ataka hokusoma hadithi ile.
11. A. Juma ana jipya shati la rangi buluu.
B. Juma ana shati jipya la rangi buluu.
C. Juma ana shati la rangi buluu shati.
D. Juma ana jipya la rangi buluu shati.
12. A. Msichana hajapata kitabu chake bado.
B. Msichana hapata kitabu chake bado.
C. Msichana hamepata kitabu chake bado.
D. Msichana sijapata kitabu chake bado.
E. Msichana bado kupata kitabu chake.
13. A. Mama ana kikubwa cheusi chombo.
B. Mama ana chombo cheusi vikubwa.
C. Mama ana chombo cheusi kikubwa.
D. Mama ana chombo kubwa cheusi.
14. A. Mtu yule ana koti za rangi ya kahawa.
B. Mtu yule ana rangi ya kahawa koti.
C. Mtu yule ana koti za kahawa.
D. Mtu yule ana koti ya rangi ya kahawa.
15. A. Mama alikwendea nyumbani kwa miguu.
B. Mama alikwenda nyumba kwa miguu.
C. Mama alikwendea kwa miguu nyumbani.
D. Mama alikwenda nyumbani kwa miguu.
16. A. Juma aliwatazama watu wakifanya kazi.
B. Juma aliwatazama watu kufanya kazi.
C. Juma alitazama watu walifanya kazi.
D. Juma aliwatazama watu alifanya kazi.
17. A. Nikuwako shambani Jumapili iliyopita.
B. Nilikuwa shambani Jumapili iliyopita.
C. Nikuwa shambani Jumapili iliyopita.
D. Nilikuwako shambani Jumapili iliyopita.
18. A. Mvulana yule alisikia msichana kucheke.
B. Mvulana yule alisikia kuchekeka msichana.
C. Mvulana yule akusikia kucheke cha msichana.
D. Mvulana yule alisikia kicheko cha msichana.
19. A. Juma alipata viatu kile.
B. Juma alipata viatu moja.
C. Juma alipata kiatu vile.
D. Juma alipata viatu vile.

20. A. Kazi mtu yule iliwastaajabisha wanawake.
 B. Kazi ya mtu yule iliwastaajabisha wanawake.
 C. Kazi ya mtu yule waliwastaajabisha wanawake.
 D. Kazi kwa mtu yule aliwastaajabisha wanawake.
21. A. Baadhi wa paka walikuwa weusi.
 B. Paka baadhi walikuwa weusi.
 C. Baadhi paka walikuwa weusi.
 D. Baadhi ya paka walikuwa weusi.
 E. Baadhi ya paka alikuwa eusi.
22. A. Asha alifika lini shambani?
 B. Asha lini alifika shambani?
 C. Lini Asha alifika shambani?
 D. Lini shambani Asha alifika?
23. A. Nini watoto nitawalisha?
 B. Nitawalisha watoto nini?
 C. Nitawalisha nini watoto?
 D. Nitawalisha watoto nini maziwa?
24. A. Juma aona mwanzo wa mashindano.
 B. Juma aliona mwanzo wa mashindano.
 C. Juma aliona mwanzo mashindano.
 D. Juma alionea mwanzo wa mashindano.
25. A. Mwanamke ni kupika chakula cha jioni.
 B. Mwanamke akupika chakula cha jioni.
 C. Mwanamke alikuwa anapika chakula cha jioni.
 D. Mwanamke anapika chakula cha jioni.
26. A. Kumea kwa nyanya kulimstaajabisha mkulima yule.
 B. Kumea ya nyanya kulimstaajabisha mkulima yule.
 C. Kumea kwa nyanya kumstaajabisha mkulimu yule.
 D. Kumea nyanya kulimstaajabisha mkulima yule.
27. A. Asha aliwaona Juma akimsaidia mwanamke mzee.
 B. Asha aliona Juma alimsaidia mwanamke mzee.
 C. Asha akuona Juma akimsaidia mwanamke mzee.
 D. Asha aliona Juma akimsaidia mwanamke mzee.
28. A. Mariamu alimfurahisha na kuogelea kwa wasichana.
 B. Kuogelea kwa wasichana kulimfurahisha Mariamu.
 C. Kuogelea washichana kulimfurahisha Mariamu.
 D. Kuogelea kwa wasichana walimfurahisha Mariamu.
29. A. Mtu yule alituambia kwamba Daudi alishinda mchezo.
 B. Mtu yule alimwambia Daudi alishinda mchezo.
 C. Mtu yule aliambia kwamba Daudi alishinda mchezo.
 D. Mtu yule alituambia Daudi alishinda mchezo.

30. A. Mwanzo mashindano ulituumsha.
B. Mwanzo kwa mashindano ulituumsha.
C. Mwanzo wa mashindano kuamsha.
D. Mwanzo wa mashindano ulituumsha.
31. A. Yakulazimu ulienda kulala?
B. Yakulazimu enda kulala?
C. Yakulazimu uende kulala?
D. Yakulazimu kwende ulilala?
32. A. Ng'ombe baadhi walikuwa wagonjwa.
B. Baadhi ng'ombe walikuwa wagonjwa.
C. Baadhi ya ng'ombe walikuwa wagonjwa.
D. Baadhi ya ng'ombe alikuwa mgonjwa.
33. A. Wavulana walijua kwamba mtoto alikuwa akilengwalengwa na machozi.
B. Wavulana walijua kwa mtoto alikuwa akilengwalengwa na machozi.
C. Wavulana walijua mtoto alikuwa akilengwalengwa na machozi.
D. Wavulana walimjua mtoto alikuwa akilengwalengwa na machozi.
34. A. Kumaliza kazi kulikuwa rahisi.
B. Kumaliza kwa kazi kulikuwa rahisi.
C. Kumaliza kazi ilikuwa rahisi.
D. Kumaliza kazi kuwa rahisi.
35. A. Ilihuzunisha kumwona mtoto yule akilengwalengwa na machozi.
B. Illihuzunisha kuona mtoto yule akilengwalengwa na machozi.
C. Ilituhuzunisha kumwona mtoto yule akilengwalengwa na machozi.
D. Illituhuzunisha tulimwona mtoto yule akilengwalengwa na machozi.
36. A. Mwalimu aliniamuru pale yanilazimu kukaapo.
B. Mwalimu aliniamuru pale ambapo yanilazimu nikae
C. Mwalimu aliniamuru ambapo yanilazimu kukaa.
D. Mwalimu aliniamuru yanilazimu kukaa pale.
37. A. Je, Mariamu ataondoka?
B. Je, ataondoka Mariamu?
C. Je, Mariamu atakuwa ataondoka?
D. Je, Mariamu akunondoka?
38. A. Nilikumwona Baba kuja.
B. Nilimwona Baba alikuja.
C. Nilimwona Baba akiya.
D. Niliona Baba kuja.

39. A. Nilikimbia bustani nilikucheza.
B. Nilikimbia bustani nilicheze.
C. Nilikimbia bustani kucheza.
D. Nilikimbia busta kucheza.
E. Nilikimbia bustani nicheza.
40. A. Mtu yule yu hodari kwa kuandika.
B. Mtu yule hodari kwa kuandika.
C. Mtu yule hodari kuandika.
D. Mtu yule ya hodari kuandikia.
41. A. Mtoto amelala alimstaaajabisha Babake.
B. Kulala kwa mtoto kulimstaaajabisha Babake.
C. Kulala mtoto alimstaaajabisha Bakake. .
D. Kulala kwa mtoto alimstaaajabisha Babake.
E. Kwamba mtoto amelala ilimstaaajabisha Babake.
42. A. Mariamu anapenda sana anaendesha gari.
B. Mariamu kupenda sana keundesha gari.
C. Mariamu anapenda sana aliendesha gari.
D. Mariamu anapenda sana kuendesha gari.
E. Mariamu kupenda sana anaendesha gari.
43. A. Mvulana alikwenda alivua samaki.
B. Mvulana alikwenda alikuvua samaki.
C. Mvulana aliendea kuvua samaki.
D. Mvulana alikwenda kuvua samaki.
44. A. Mama alimtaka Asha anunue machungwa.
B. Mama ataka Asha anunua machungwa.
C. Mama ataka Asha anunue machungwa.
D. Mama ataka Asha kununua machungwa.
E. Mama alimtaka Asha kununua machungwa.

Part 2: Recognition

Kwa mfano.

- Shati la Baba ni la rangi nyekundu. _____ ni la buluu.
- A. Langu
 - B. Yeye
 - C. Zangu
 - D. Baba.
45. Wavulana walizungumza _____ wakingojea.
- A. wavulana
 - B. walipokuwa
 - C. waliokuwa
 - D. alipokuwa

46. Asha _____ alitengeneza nguo.
 A. pekee
 B. yeye
 C. na mama
 D. mwenye
 E. mwenyewe
47. Juma anasoma kitabu na Asha _____ gazetti.
 A. anasoma
 B. kusoma
 C. akisoma
 D. wanasoma
48. Mama alinipikia mayai. Mayai yale ni _____.
 A. yetu
 B. yenu
 C. yake
 D. yangu.
49. Baba alitupandia mimea. Mimea ile ni _____.
 A. yao
 B. yeye
 C. sisi
 D. yetu
50. Mama _____ nguo na Baba atanunua viatu.
 A. atanunua
 B. kununua
 C. akununua
 D. tununua
51. Juma alifanya kazi lakini Njoroge _____ pekee.
 A. kucheza
 B. alicheza
 C. walicheza
 D. akacheza
52. Asha aliwaita watoto _____ walitoroka.
 A. au
 B. kwa
 C. lakini
 D. tangu
53. Wasichana walikwenda shule. Kaka yao alikaa nyumbani _____.
 A. pekee
 B. pamoja
 C. yeye
 D. mwenyewe
54. Uliwashukuru walimu _____ walimsaidia Juma.
 A. ambaye
 B. ambao
 C. ambapo
 D. kwamba

55. Mtoto mdogo alijipoteza wasichana walimwambia

 A. yeye
 B. Mamaake
 C. wao
 D. Mamao
56. Asha na Mariamu walipika ugali. Rafiki _____
 walipika samaki.
 A. zao
 B. yao
 C. wao
 D. zako
57. Wasichana walipofika kwao, Juma alikuja kukutana

 A. wasichana
 B. naye
 C. wenyewe
 D. nao
58. Chakula _____ Mamangu alinipikia kilinipendezea.
 A. ambaye
 B. ambapo
 C. ambavyo
 D. ambacho
59. _____ Mariamu _____ Mamake alishona nguo ile.
 A. Wala wala
 B. Si wala
 C. Wala ama
 D. Wala au
60. Ulichukua kitabu kili _____ kuwa ghali.
 A. ambacho
 B. po
 C. cho
 D. o
61. Mama ya Asha alipika chakula cha mchana, _____
 Asha alisafisha vikombe.
 A. halafu
 B. baada ya
 C. tangu
 D. na
62. Juma haendi Nairobi, _____ Mombasa, _____
 Kisumu.
 A. wala wala
 B. wala au
 C. wala na
 D. si si

63. Tulimwona Asha a _____ weka kitabu mezani.
 A. ki
 B. ka
 C. ta
 D. na
64. Watoto waliona mpira ule uli _____ anguka ziwani.
 A. wa
 B. po
 C. o
 D. Ku
65. Tulimsaidia msichana yule _____ alivunjika mguu.
 A. yeye
 B. ambao
 C. ambaye
 D. kwamba

Part 3: Comprehension

66. Baba alifungua mlango. Mama alimwona mtu mmoja.
 A. Baba alifungua mlango na Mama akamwona mtu mmoja.
 B. Baba alifungua mlango Mama alimwona mtu mmoja.
 C. Baba alifungua mlango alimwona mtu mmoja.
 D. Baba alifungua mlango na mtu mmoja.
67. Mwanamume aliingia ndani. Mwanamke yule aliingia ndani.
 A. Mwanamume na mwanamke yule waliingia ndani.
 B. Mwanamume aliingia ndani na mwanamke yule aliingia.
 C. Mwanamume mwanamke waliingia ndani.
 D. Mwanamume na mwanamke aliingia ndani.
 E. Mwanamume aliingia ndani na mwanamke aliingia ndani.
68. Wavulana walitengeneza meza moja. Wavulana walitengenza viti.
 A. Wavulana walitengeneza meza moja na viti.
 B. Wavulana walitengeneza meza moja walitengeneza viti.
 C. Wavulana walitengeneza meza wavulana walitengeneza viti.
 D. Wavulana walitengeneza meza moja viti.
69. Juma alifungua mlango. Juma alifunga mlango.
 A. Juma alifungua Juma alifunga mlango.
 B. Juma alifungua mlango Juma alifunga mlango.
 C. Juma alifungua akifunga mlango.
 D. Juma alifungua na akafunga mlango.

70. Wasichana walimlisha ndugu yao mdogo. Wavulana walimlalisha ndugu yao mdogo.
- Wasichana walimlisha na walimlalisha ndugu yao mdogo.
 - Wasichana walimlisha ndugu yao dogo na wavulana walimlalisha.
 - Wasichana walimlisha wavulana walimlalisha ndugu yao mdogo.
 - Wasichana walimlisha ndugu yao mdogo wavulana walimlalisha.
71. Nilimpiga mtoto yule. Mtoto yule alilengwalengwa na machozi.
- Nilimpiga mtoto yule na mtoto yule akalengwalengwa na machozi.
 - Nilimpiga mtoto yule mtoto yule alilengwalengwa na machozi.
 - Nilimpiga mtoto yule na nililengwalengwa na machozi.
 - Nilimpiga mtoto yule na kulengwalengwa na machozi.
72. Mvulana mmoja alimpiga Asha.
- Asha alipiga na mvulana mmoja.
 - Asha alipigwa na mvulana mmoja.
 - Asha alimpigwa na mvulana mmoja.
 - Asha alimpigwa mvulana mmoja.
73. Ng'ombe walichungwa na mvulana.
- Mvulana alichungiwa na ng'ombe.
 - Ng'ombe walichungia mvulana.
 - Ng'ombe walichungwa mvulana.
 - Mvulana alichunga ng'ombe.
74. Tulizungumza na msichana yule. Msichana alikuwa amevaa nyekundu.
- Tulizungumza na msichana yule alikuwa amevaa nyekundu.
 - Tulizungumza na msichana yule aliyekuwa amevaa nyekundu.
 - Tulizungumza na msichana yule msichana yule alikuwa amevaa nyekundu.
 - Tulizungumza msichana yule yeye amevaa nyekundu.
75. Watoto wale na msichana walicheza pamoja. Msichana yule amevaa nyekundu.
- Watoto wale na msichana ambaye amevaa nyekundu walicheza pamoja.
 - Watoto wale na msichana walicheza pamoja ambaye amevaa nyekundu.
 - Watoto na ambaye walicheza pamoja msichana amevaa nyekundu.
 - Watoto na msichana walicheza pamoja msichana ambaye amevaa nyekundu.

76. Juma alitazamwa na Musa.
 A. Musa alimtazama Juma.
 B. Juma alimtazama Musa.
 C. Musa alitazamwa na Juma.
 D. Juma kutazamwa Musa.

Part 4: Comprehension

77. Yamlazimu aende pamoja na mamake?
 A. Yamlazimu mamake aende.
 B. Ndiyo, yamlazimu.
 C. Kama yeye ana adabu.
 D. Ndiyo, alienda.
78. Je, Juma aweza kupata kitabu kile?
 A. Ndiyo, aweza.
 B. Ndiyo, apata.
 C. Atanunua kitabu kile.
 D. Juma alipata kitabu.
79. Wavulana walicheza mpira kwa muda gani?
 A. Siku nzima.
 B. Wavulana walicheza futiboli
 C. Futiboli
 D. Kwa miguu.
80. Yupi ni mkubwa zaidi, paka au mbwa?
 A. Paka
 B. Paka ni mdogo
 C. Mbwa
 D. Wao ni wakubwa
81. Juma aweza kutengeneza baiskeli ile, siyo?
 A. Siwezi kutengeneza.
 B. Kuweza.
 C. Hapana, hawezi.
 D. Baiskeli ni mpya.

Part 5: Comprehension

82. Baba alimwona msichana aliyemshukuru Juma.
 A. Juma alimshukuru msichana.
 B. Baba alimshukuru msichana.
 C. Msichana alimshukuru Juma.
 D. Baba alimwona Juma.
83. Juma anajua kwamba watoto wanapenda paka.
 A. Paka anawapenda watoto.
 B. Juma anapenda paka.
 C. Juma anawaua watoto.
 D. Watoto wanapenda paka.
 E. Juma anamjua paka.

84. Iliwastaaajabisha wasichana kwamba paka alimfuata mbwa.
A. Paka alimfuata mbwa.
B. Wasichana walimfuata mbwa.
C. Paka aliwastaaajabisha wasichana.
D. Mbwa alimfuata paka.
85. Asha apenda mpira. Mpira si mpya.
A. Mpira si wa kale.
B. Mpira ni mpya.
C. Mpira ni wa kale.
D. Asha hapendi mpira.
86. Juma alimwona askari akishindwa na gari.
A. Gari ilishindwa na askari.
B. Juma alishinda askari.
C. Juma aliona gari.
D. Askari alishindwa.
87. Juma alimshukuru mwalimu wake akaenda nyumbani.
A. Mwalimu wake alikwenda nyumbani.
B. Mwalimu alimshukuru Juma.
C. Juma alikwenda nyumbani.
D. Juma na mwalimu wake walikwenda nyumbani.
88. Msichana ajua kwamba mvulana amekwenda shuleni.
A. Mvulana amekwenda shuleni.
B. Msichana amekwenda shuleni.
C. Msichana ajua shule.
D. Mvulana amjua msichana.
89. Juma amjua fundi yule ambaye ametengeneza baiskeli.
A. Juma ametengeneza baiskeli.
B. Fundi yule ametengeneza baiskeli.
C. Fundi ajua baiskeli.
D. Juma na Fundi wametengeneza baiskeli
90. Uliwaona wasichana ambao Juma aliwasaidia.
A. Ulimwona Juma.
B. Juma aliwasaidia wasichana.
C. Juma aliwaona wasichana.
D. Uliwasaidia wasichana.
91. Asha au mamake alishona nguo.
A. Asha na mamake walishona nguo.
B. Asha alishona nguo au mamake alishona nguo.
C. Asha na mamake pamoja walishona nguo.
D. Wala Asha wala mamake aklishona nguo.
92. Juma alimpa mtoto mpira ambaye alikuwa akibebwa na Asha.
A. Juma alikuwa akibebwa na Asha.
B. Juma alimpa mtoto.
C. Mpira ulikuwa ukibebwa na Asha.
D. Juma alimpa mtoto mpira.

93. Kuuzwa kwa nyumba kulihuzunisha Daudi.
A. Daudi alihuzunishwa kwa kuuzwa.
B. Daudi alihuzunisha nyumba.
C. Daudi aliuzwa nyumba.
D. Nyumba ilihuzunisha Daudi.
94. Asha alipendezwa na kukimbia kwa mnyama.
A. Mnyama alimpendeza Asha.
B. Asha alimpendeza mnyama.
C. Kukimbia kwa mnyama kulimpendeza Asha.
D. Kukimbia kulipendzwa na mnyama.
95. Kugongana kwa mashua kulitisha watoto.
A. Mashua alitisha watoto.
B. Kugongana kulitisha mashua.
C. Kugongana kulitisha watoto.
D. Watoto walitisha mashua.
96. Mvulana ambaye alitazamwa na Asha alitupa mpira.
A. Mvulana alitazama Asha.
B. Asha alitupa mpira.
C. Mvulana alitupa mpira.
D. Asha alitazama mpira.
97. Watoto waliokuwa wamechoka na walilala kitandani.
A. Watoto walikuwa wamechoka na walilala kitandani.
B. Watoto walikuwa wamechoka waliolala kitandani.
C. Watoto walikuwa wamechoka walilala kitandani.
D. Watoto waliokuwa wamechoka watoto walilala kitandani.
98. Juma alisikia kelele ya mwanamke yule.
A. Mwanamke yule alimsikia Juma.
B. Kelele alimsikia mwanamke yule.
C. Kelele alimsikia Juma.
D. Juma alimsikia mwanamke yule akipiga kelele.
99. Kazi ya msichana ilistaajabisha babake.
A. Msichana alimstaajabisha babake.
B. Babake alimstaajabisha msichana.
C. Babake alifanya kazi.
D. Kazi ilistaajabisha babake.
100. Tulibeba watoto waliokuwa wadogo.
A. Tulibeba watoto wadogo.
B. Tulibeba wadogo watoto.
C. Tulibeba watoto walikuwa wadogo.
D. Tulibeba wadogo waliokuwa watoto.

101. Mtu aliyenunua ng'ombe kwa baba amevaa koti ya rangi ya kahawa.
A. Baba amevaa koti ya rangi ya kahawa.
B. Mtu amevaa koti ya rangi ya kahawa.
C. Baba alinunua ng'ombe.
D. Mtu alinunua koti ya rangi ya kahawa.
102. Wavulana walimjua mtu. Mwalimu alimpa mtu yule pesa.
A. Wavulana walimjua mtu ambaye mwalimu alimpa mtu yule pesa.
B. Wavulana walimjua mtu ambaye mwalimu alimpa yeye pesa.
C. Wavulana walimjua mtu ambaye alipewa pesa na mwalimu.
D. Wavulana alimjua mtu ambaye mwalimu alimpa pesa.
103. Juma aliangalia kukua kwa mimea.
A. Kukua kwa mimea iliangalia Juma.
B. Juma alikua mimea.
C. Juma aliangalia mimea ikikua.
D. Mimea ilimwangalia Juma.
104. Niliwaona watoto. Mtu alizungumza na watoto.
A. Niliwaona watoto ambao mtu alizungumza nao.
B. Niliwaona watoto ambao mtu alizungumza na watoto wale.
C. Niliwaona ambao mtu alizungumza.
D. Nilimwona mtu alizungumza na watoto.

APPENDIX E

COMPLETE COMPARATIVE DATA
FOR THE TSA-E AND TSA-S
MOMBASA POPULATION
N=429

TSA-E		
Structure	Rank Order	% Correct
NEG	2	77.5
CONJ	9.5	69.0
DIS/ALT	15.2	60.8
DET	4.5	71.8
WH	4.5	72.2
ANS ENV	3	74.7
YES-NO	1	80.3
VB SEQ	15.2	61.0
M,L,A,	13.5	61.3
PASS	20	48.5
POSS ADJ	9	69.0
REFLEX	6.5	71.2
POSS PRO	6.5	71.0
FB-PRON	13.5	61.3
REL COMP	18	55.2
REL PRO/ADV	8	69.7
EMBED	19	52.4
THAT-COMP	15.2	60.9
INF/GER	9.5	69.4
NOMIN	12	64.3

TSA-S		
Structure	Rank Order	% Correct
NEG	9	70.2
CONJ	17	54.8
DIS/ALT	1	89.9
DET	6	80.3
WH	2	87.6
ANS ENV	11	67.8
YES-NO	8	74.8
VB SEQ	3.5	86.2
M,L,A,	16	55.7
PASS	14	64.3
.....		
REFLEX	10	69.3
POSS PRO	7	78.9
FB-PRON	5	81.3
REL COMP	18	50.7
REL PRO/ADV	13	66.6
.....		
THAT-COMP	3.5	86.2
INF/GER	12	67.5
NOMIN	15	62.9

APPENDIX F

TSA-E STRATEGY DATA ON INDIVIDUAL STUDENTS

O = ORDERED STRATEGY
N = UNORDERED STRATEGY
X = OTHER ERROR

ITEM # TSA-E

OBSERV.	80	81	84	102	104	108	112	94	101	105
1	N						N	N	X	N
2	O		X	O	O	O	N	X	X	O
3	O			O	O	O			X	O
4	O	N	N	N	O	N	X	N		N
5				O	O		X	N	X	O
6			N	N	X	O	N	N		X
7	O	N	O		O	X	O	O	O	
8	O			N	X	O		O		O
9	X	N	O			O	O	O		O
10	N		X	N	X	N	X	N	N	X
11	O			X		O		O		
12	O				O			O	O	
13			X	O	O	O	O	O	O	O
14	O		O	O		O	O		O	
15	O		O	O	O	O		O	O	O
16	O	O	O			N	N	X	O	
17	O				O	O			X	O
18	O						O	O	N	
19	O		O	O		O	O	O	O	O
20	O	N		N	N	N	X	X	X	N
21	O		O	X					O	O
22				O			O		X	O
23	O	O	O				N		O	O
24	N		N					O	X	N
25	O	O	O	O	O	O	O	O	O	
26	O	N	N		N	O	N	N	X	
27	O			O				O		O
28	N		O	N	N	O	N		O	O
29	O	N	N	X		O	N	O	X	X
30	O			O	O				O	
31	O			O	O				O	
32	O		O	N	O			O	O	
33		O	N	O	O	O	N	X		O
34			O	N	X			N		N
35	O	N	O	N	X	N	N	O	X	N
36	O	N	O			X	O	O	X	O
37	O	X	O			N	O			
38			O		N	N			N	O
39	O							O	O	N
40	N	O	O	X	X	O		O	X	O
41	N	O	O	O		N			X	
42	O	O	O	O	X	N	X	N	O	
43	O		N	O	N	N	N		X	N
44	N	N		X		N	N	O		N
45	N	N	N		O	X	X		X	N
46	O	N	N		X	X	X	O	O	O
47	O		N	N	O		O	O		

OBSERV.	80	81	84	102	104	108	112	94	101	105
48		O	O	X		X	O	N		
49	O	N	O		X	O	O	O		O
50	O		O		N		O	O		
51	O	O	O	O	N	N	O			O
52	O		X		N			O	O	O
53	O			N			X	O	O	
54	O	O	O	X		X				
55	O		X	N		N	N	N		
56	O		X	N	X	O		O		O
57	O			O	O		O	O		
58	O	O			X	X				O
59	O	O	O	X	X	X				O
60	O	O	O	O		X	X			O
61	O				O	O	O	O	O	O
62	O			N	N	N	N			N
63	O					N		N	O	O
64										
65	N			N	N	N	N		O	
66	O		X				N	N		N
67	O	O	O	N		O	O		O	
68	O		N		O	O	O		O	
69	O		O		N		X		O	
70	O		N	N	O	N	N		O	
71	N	N	O							O
72	O	N	O	X			X			N
73	O		O		N	N	N			N
74	O	N	N	N	N	N	X		X	N
75	O	O			N		X	O		
76	O		X	N			X	O		
77	O	O			O			O		
78				O	O	O	X	O	O	O
79	O	O	O	N	N		O	O	O	O
80			O			O	X	O		
81	O	O	O	N		O	X		X	
82	O		O			N	N		N	N
83	O		O	O	O		N	O		N
84	N	O	O	X						O
85	O	O		X	O	O		O	O	O
86	N		N		O	N	N	X	O	O
87	O		O			N	O	O		N
88	O					O		O		N
89	O		N	O	O		O	O	O	
90	O						O	O	X	
91		O	O		O	O			X	
92	O		O	N	N	N	N	X		N
93	O		O	N		O	N	O		
94	O			X	N				N	N
95	O	O	O	O	X		O	O	O	
96	O					O	N			O
97			N	N	O	O	N			N
98	O	N				O	X		O	O

OBSERV.	80	81	84	102	104	108	112	94	101	105
99					O	O	O		O	
100	O	N	X			N				N
101	O			O		O		O		
102	O			N	O		X	O	O	N
103	N	N	N	N	X	X	X	X	X	N
104	N	N	N	N	X			O	X	X
105	O			N	O		O	O	O	O
106	O			N	O		N	O	X	O
107	O	O			O	O		O	X	
108	O		N	N			X	N	X	N
109	O	O	O	O	X	X	X		O	
110	O		N	O			O		X	
111	O		O	O	O	N		O		
112	O		N		O	N		O		
113	O	N	O			O		N		O
114	O	O				O			X	N
115	N	O		N		O			X	N
116	N	O	O		X	O	O		X	O
117	O		O		O	N	O	O	X	
118	O	O	N	O	O	O	N			O
119	N	N	O	N	N			O	X	N
120	O	O		N		O	N	O		
121	O			N		N	O			O
122				N	N		N	O	N	
123	O	N			O	O		N	O	O
124	O		N	N	X		N			
125	O	N		O	O	O		N	O	O
126	O				O	O		O	X	
127		N	N	X	O	O	N			N
128	O			O	O	N	O		O	O
129	N	O	O	O	X		X	X		
130	O			X				O	X	O
131	O				O	O		O		N
132	O		O			N	N	O		
133	N	N			N	N	N	N		X
134	N	N	X		N	O			X	O
135	O		O			O	O	O	O	O
136	O	O	N	N		O		O		O
137	O	N	N				N			
138	O	O			O	O		O	O	
139	O	O				N	N			
140	O	O				N	N			
141	O	O	N	O				O	O	
142	O				O	N	N		X	
143	O	O		X			N	O		O
144	O				N		O	O		O
145			N		N	N			O	
146	O	N	O	X		N	N	N		X
147	O					O			O	O
148	O				N	O		O	O	O
149	N	N	N	O	N	O		O	O	N

OBSERV.	80	81	84	102	104	108	112	94	101	105
150	O		O		O	N	X		O	O
151	N		O	O	N	N	O	O	O	
152		O	O	O	O	O			O	
153	O			O		O		O	O	
154	N	N	O		N	N	O	N		N
155	O		O	O	X	N		O	X	O
156	N	O	O	X	X	X			O	O
157		O	O	X		O				O
158	O	O	O	O	N	O		O		
159	O	O		O	X		N	O		
160	O	O		O		O	X		X	O
161	O	O	N	X	N	O		O		
162	O	O	O			O	O	O		N
163	N	N	N			N	N		N	O
164	O	O	N	O	X	N	X	O	O	O
165	O	O		O		N	N		X	O
166	O			N	N			O	O	O
167		N		N	N	X	X	O	N	O
168	O		N		N	N	N		X	
169	O			N	N	N			X	
170	N	N	N		N			O		N
171	O	N	O	O	N	O	X	O		
172	N	O	N	N		X	N	O	O	O
173	O	N	O		X	N		O	X	N
174	N	O	O			O	X	O	O	
175	O		O	X	N	O	O	O	X	N
176	O				O			O	X	O
177	O			O			N		O	N
178	O			X		N	N	X	O	N
179	O					O		O		O
180	O			N		O				O
181	O			O	O	O			X	O
182			N	X	O	O		N		N
183	O				O	N	N	O	X	N
184	O				N			O	X	O
185	O			O		O	O			
186	O				O			N		N
187	O	N	N	X		X	N	O		O
188	O	N	O	N	X			O		N
189	O		O	X			O			N
190	O		O	N		N				
191	N			O		N		N	X	
192	N	O	O		O	O	O			
193	O				X	O				O
194	O	O	O	O		X	O		O	O
195	O		O				N	N		
196		O	N	N	O	O	N	N		O
197	O	O			O	O			X	O
198	O	O				O				N
199	O	O	O			O		N	O	O
200		O		O				O	X	O

OBSERV.	80	81	84	102	104	108	112	94	101	105
201	O		O			N	N	N	X	O
202	O	N	N	O		N	N	O	O	O
203	N	O	O	N	O	O			O	
204	O		N	X			X	N		O
205	O				O	O				O
206	O		O	X			X		O	N
207	O	N	O		O	N	X	O		O
208	O	O		X	N	X	O		O	N
209		N	O	N			O	O	O	O
210	O		O	O	O		O			
211		N	N		N	N	N	N	O	O
212	O	O		O			O		X	N
213	O	N		O	O	O		O		O
214	O	O		X	O		O			
215	O	O	O			N	X	O	X	N
216		N	N	N		O	O	O	X	O
217		O	N	X	O	O	X		O	O
218			N				X	N	O	
219	O	N			O			O	O	O
220	O	O	O	O		O	X	O	X	N
221	O	N			N			N	X	N
222	O	N	N	N		N	N	N		
223				N	O	O	X	O		
224	N	N		O		O	O	O		N
225	O		N	N			N			
226	O				O		O			O
227	N				O		O	O		N
228	O	N		N		N		O	X	N
229	O	N	O	O			X	O	X	
230	O			O	X		O			
231	O		O					O	O	
232	O			N	O	N	X	N		N
233	O			O	O		O	N	X	
234	N	N	N	N	N	N	N		X	O
235	O		O		O			O	X	O
236	O			O			O		X	O
237	O		O				O	O		O
238	N		O	O				N	O	
239					O		O	O	O	
240	O			O	O	O			O	O
241	O	N	N			O	N		X	O
242	O	N	O	N	N	N	N	O		
243	O	N	N	X		N		O	O	
244	O			X		O	O		O	O
245	O	N	O	O					O	
246	O	N	N	O	O		N	N		O
247	O	N	O		X	X	X	N		X
248				O	O			O	O	
249	O			N	O				X	O
250	O			N		N			O	
251	O		O	N	O	O			O	

OBSERV.	80	81	84	102	104	108	112	94	101	105
252	O			N	O			N	X	O
253	O	N		N		N		O	X	
254	O	N	O					N	X	O
255	O		N			O		O		O
256	O	O	O	O			O	O		O
257	O	O		O		O		O	X	N
258	O				O	O		O	O	O
259	N		N		O		O		X	O
260	O	O	O		N	O	O	O		O

APPENDIX G

WORD RECOGNITION TEST
SAMPLE

Circle the correct form of each word.

Example:

X)	picter	picture	picture	piktur

1)	opposite	apposite	oposite	opposiet
2)	mihgt	miht	might	mait
3)	alpabetical	alphabetical	alfabetical	alhpabetical
4)	akwerd	awkward	akward	awkwrad
5)	similar	simliar	similer	simlar
6)	dialog	dialogeu	dialoge	dialogue
7)	conjunkshun	conjuntcion	conjuntion	conjunction
8)	italicks	itailics	italics	itlics
9)	adjective	ajective	adjetiv	adjectvie
10)	dictionery	ditcionary	ditionary	dictionary

APPENDIX H

READING COMPREHENSION TEST SAMPLE

Please read the story below. After you read the story answer the questions. Answer the questions YES or NO based only on the information that is in the story.

It was half past three, the school bell had rung, and all of the students were leaving school; all of the students but John. John was being punished by the teacher for coming to school two hours late. John had told his teacher that because his sister had forgotten to call him that morning he had slept late. The teacher said that being on time for school was his responsibility and not his sister's.

Now John had to stay in the classroom and write a composition about the importance of arriving to school on time while his friends were outside playing football. At five o'clock, John finally finished his work and went home to eat dinner. It had been a hard punishment for being late for school and he promised himself that he would never do it again.

That evening he bought an alarm clock.

- 1) Were John's friend playing football outside at 2 o'clock? _____
- 2) Did John's sister usually wake him for school? _____
- 3) Did John promise his teacher he would not be late? _____
- 4) Did John think the punishment was hard? _____
- 5) Was John over an hour late for school? _____
- 6) Did John play football with his friends after school? _____
- 7) Did it take John more than an hour to write the composition for his teacher? _____
- 8) Did John's teacher think that coming to school on time was John's responsibility? _____

- 9) Did John buy his sister a clock? _____
- 10) Did John write the composition before the school bell
had rung? _____

REFERENCES

- Abdulaziz, M. Letter to the Editor. Sunday Daily Nation April, 1974.
- African Education Commission. (1923-1924). Education in East Africa: a Study of East, Central and South Africa by the Second African Education Commission under the Auspices of the Phelps-Stokes Fund in Cooperation with the International Education Board. New York, Phelps-Stokes Fund; London: Edinburgh House.
- Anderson, J. (1970). The Struggle for the School: The Interaction of Missionary, Colonial Government and Nationalist Enterprise in the Development of Formal Education in Kenya, London: Longmans Group, Ltd.
- Ashton, E.O. (1947). Swahili Grammar, London: Longmans Green.
- Bennett, G. (1963). Kenya, a Political History: The Colonial Period, London: Oxford University Press.
- Berko, J. (1958). The child's learning of English morphology, Word 14, 150-177.
- Berman, E.H. (1970). Education in Africa and America: A History of the Phelps-Stokes Fund, 1911-1945, Columbia University, Ed.D. Dissertation.
- Bertelson, P. (1986). The onset of literacy: Liminal remarks, Cognition 24, 1-30.
- Bloom, L. (1970). Language Development: Form and Function in Emerging Grammars, Cambridge, MA: The MIT Press.
- Bond, G.L., Tinker, M.A. and Wasson, B.B. (1984). Reading Difficulties: Their Diagnosis and Correction, Englewood Cliffs, NJ: Prentice Hall.
- Braine, M.D.S. (1963). The ontogeny of English phrase structure: the first phase, Language 39, 1-13.

- British Council, English language and literature division. (1979). English Language Teaching Profile: Kenya, London, England. ERIC 230 065.
- Broomfield, G.W. (1930). The development of the Swahili language, Africa 3,4, 516-522.
- Brown, R. (1973). A First Language: The Early Stages, Cambridge, MA: Harvard University Press.
- Bruner, J.S. (1975). The ontogenesis of speech acts, Journal of Child Language 2, 1, 1-40.
- Carroll, D.W. (1986). Psychology of Language, Monterey, CA: Brooks/Cole Publishing Co.
- Cazden, C. (1968). The acquisition of noun and verb inflections, Child Development 39, 433-438.
- Chomsky, C. (1969). The Acquisition of Syntax in Children from 5 to 10, Cambridge, MA: The MIT Press.
- Chomsky, C. (1972). Reading, writing and phonology, Harvard Educational Review, 40, 287-309.
- Chomsky, N. (1965). Aspects of the Theory of Syntax Cambridge, MA: The MIT Press.
- Chomsky, N. (1971). Language and mind, In C. Laird and R.M. Gorrell (eds.) Reading About Language, New York: Harcourt, Brace & Jovanovich, Inc.
- Chomsky, N. (1977). Questions of form and interpretation. In Essays on Form and Interpretation New York: North-Holland (originally appeared in Linguistic Analysis 1.1, 1975).
- Chomsky, N., and Halle, M. (1968). The Sound Pattern of English New York: Harper & Row.
- Cziko, G.A. (1976). The effects of language sequencing on the development of bilingual reading skills, Canadian Modern Language 32, 534-539.
- Dale, P.S. (1972). Language Development: Structure and Function, Hinsdale, IL: The Dryden Press, Inc.
- East Africa Protectorate. (1919). Evidence of the Education Commission of the East African Protectorate, 1919, Nairobi, Kenya: Swift Press.

- Ehri, L.C. (1979). Linguistic insight: Threshold of reading acquisition. In T.G. Waller and G.E. MacKinnon (eds.), Reading Research: Advances in Theory and Practice, Vol. 1, New York: Academic Press.
- Ehri, L.C. (1985). Effects of printed language acquisition on speech. In D.R. Olson, N. Torrance and A. Hildyard (eds.), Literacy, Language, and Learning: The Nature and Consequences of Reading and Writing Cambridge, MA: Cambridge University Press.
- Evans, M., Taylor, N., and Blum, I. (1979). Children's written language awareness and its relationship to reading acquisition, Journal of Reading Behavior 11, 331-341.
- Ferreiro, E. and Teberosky, A. (1982). Literacy before Schooling, Portsmouth, NH: Heinemann Educational Books.
- Fromkin, V. and Rodman, R. (1974). An Introduction to Language, New York: Holt, Rinehart and Winston.
- Fry, D.B. (1964). Experimental evidence for the phoneme. In D. Abercrombie, D.B. Fry, P.A.D. MacCarthy, N.C. Scott, J.L.M. and Trim (eds.), In Honor of Daniel Jones, London: Longmans.
- Givon, T. (1985). Function, structure, and language acquisition. In D.I. Slobin (ed.), The Crosslinguistic Study of Language Acquisition, Vol. 2, Hillsdale, NJ: Lawrence Erlbaum.
- Goodglass, H. (1976). Agrammatism. In H. Whitaker and H.A. Whitaker (eds.), Studies in Neurolinguistics, Vol. 2 New York: Academic Press.
- Goody, J. (1977). The Domestication of the Savage Mind Cambridge, England: Cambridge University Press.
- Gorman, T.P. (1968). Bilingualism in the educational system of Kenya, Comparative Education 4,3, 213-221.
- Great Britain Colonial Office. (1925). Educational Policy in British Tropical Africa (Command 2374) London: His Majesty's Stationary Office.
- Greenfield, P.M. (1972). Oral and written language: the consequences of cognitive development in Africa, the United States and England, Language and Speech 15, 169-178.

- Greenfield, P.M. and Bruner, J.S. (1966). Culture and cognitive growth, International Journal of Psychology 1, 89-107.
- Hall, M.A. and Ramig, C.J. (1978). Linguistic Foundations for Reading, Columbus, Ohio: Charles E. Merrill.
- Harlow, V. (ed.). (1965). History of East Africa, Vol. 2, Oxford, England: Claredon Press.
- Heilman, K.M. and Scholes, R.J. (1976). The nature of comprehension errors in Broca's conduction and Wernicke's aphasia, Cortex 12, 258-265.
- Hiebert, E. (1980). The relationship of logical reasoning ability, oral language comprehension, and home experiences to preschool children's print awareness, Journal of Reading Behavior 12, 313-324.
- Hiebert, E. (1981). Developmental patterns and inter-relationships of preschool children's print awareness, Reading Research Quarterly 16, 236-260.
- Hunter, G. (1963). Education for a Developing Region: A Study in East Africa London: George Allen and Unwin, Ltd.
- Hyder, M. (1966). Swahili in the technical age, East Africa Journal 2,9, 3-10.
- Indire, F. (1982). Education in Kenya. In A.B. Fafunwa and J.V. Aisiku (eds.) Education in Africa: A Comparative Survey, London: George Allen and Unwin.
- Jacobs, R.A. and Rosenbaum, P.S. (1968). English Transformational Grammar, Waltham, MA: Blaisdell.
- Kalmar, I. (1985). Are there really no primitive languages? In D.R. Olson, N. Torrance and A. Hildyard (eds.), Literacy, Language, and Learning: The Nature and Consequences of Reading and Writing, Cambridge, MA: Cambridge University Press.
- Kean, M.L. (1979). Agrammatism: A phonological deficit? Cognition 7, 69-84.
- Kean, M.L. (ed.). (1985). Agrammatism, Orlando, FL: Academic Press.
- Kenya Education Commission Report: Part 1 December, (1964). Nairobi, Kenya: First English Press, Ltd.

- Kenya Institute of Education, Department of Curriculum Development. (1971). Masomo ya Kiswahili, Nairobi, Kenya: Jomo Kenyatta Foundation.
- Kenya Ministry of Education. (1975). Kenya Syllabus for Primary Schools, Nairobi, Kenya: Jomo Kenyatta Foundation.
- Kenya Ministry of Education. (1978). Kenya Syllabus for Primary School, Nairobi, Kenya: Jomo Kenyatta Foundation.
- Klima, E. and Bellugi-Klima, U. (1966). Syntactic regularities in the speech of children. In J. Lyons and R.J. Wales (eds.) Psycholinguistic papers, Chicago: Aldine.
- Krashen, S.D. (1985). Insights and Inquiries: Second Language Teaching, Immersion and Bilingual Education, Literacy Howard, CA: Alemany Press.
- Lambert, W.E. and Tucker, G.R. (1972). Bilingual Education of Children, Rowley, MA: Newbury House.
- Lecours, A.R., Mehler, J., Parente, M.A. and collaborators. (1987). Illiteracy and Brain Damage, Tapuscrits CHCN Working Papers #9, Montreal, Quebec: Centre de Recherche du Centre Hospitalier Cote-des-Neiges.
- Lenneberg, E.H. (1967). Biological Foundations of Language New York: John Wiley and Sons.
- Lewis, L.J. (1962). Education and Political Independence in Africa, and Other Essays, Westport, CT: Greenwood Press.
- Liberman, A.M., Harris, K.S., Hofmann, H.S. and Griffith, B.C. (1957). The discrimination of speech sounds within and across phoneme boundaries, Journal of Experimental Psychology 54, 358-368.
- Liberman, I.Y., Shankweiler, D.F., Fischer, W. and Carter, B. (1974). Explicit syllable and phoneme segmentation in the young child, Journal of Experimental Child Psychology 18, 201-212.
- Loogman, A. (1965). Swahili Grammar and Syntax Pittsburgh, PA: Duquesne University Press.
- Lord, F.M. (1952). The relation of the reliability of multiple-choice tests to the distribution of item difficulties, Psychometrika June, 181-194.

- Luria, A.R. (1976). Cognitive Development: Its Cultural and Social Foundations Cambridge, MA: Harvard University Press.
- McCarthy, D. (1954). Language development in children. In L. Charnichael (ed.), Manual of Child Psychology, Second Edition, New York: John Wiley and Sons.
- McCawley, J. (1980). An unsyntax. In E.A. Moravcsik and J.R. Wirth (eds.) Syntax and Semantics, Vol. 13, New York: Academic Press.
- McCawley, J. (1982). How far can you trust a linguist? In T.W. Simon and R.J. Scholes (eds.) Language, Mind and Brain, Hillsdale, NJ: Lawrence Erlbaum Assoc.
- McLuhan, M. (1962). The Gutenberg Galaxy, New York: New American Library (1969 edition).
- McNeill, D. (1970). The Acquisition of Language: The Study of Developmental Psycholinguistics, New York: Harper and Row.
- McNeill, D. (1987). Psycholinguistics: A New Approach, New York: Harper and Row.
- Mazrui, A.A. (1967). The national language question in East Africa, East Africa Journal 4,3, 12-18.
- Mchangamwe, A.B. and Jamaadar, A. (1978). Msingi wa Kiswahili, Nairobi, Kenya: Longman Kenya Ltd.
- Memorandum on Language in African School Education. (1943). African no. 1170, London.
- Menyuk, P. (1963). Syntactic structures in the language of children, Child Development 34, 407-422.
- Menyuk, P. (1964). Syntactic rules used by children from preschool through first grade, Child Development 35, 533-546 .
- Menyuk, P. and Looney, P.L. (1972). A problem of language disorder: Length versus structure, Journal of Speech and Hearing Research 15, 264-279.
- Mercer, C.D. (1983). Students with Learning Disabilities Columbus, OH: Charles E. Merrill Publishing Co. (Second Edition).
- Michuki, D.M. (1967). Masomo ya Kiswahili Nairobi, Kenya: Jomo Kenyatta Foundation.

- Newmeyer, F.J. (1980). Linguistic Theory in America: The First Quarter-Century of Transformational Generative Grammar New York: Academic Press.
- Nickerson, R.S. (1986). Literacy and cognitive development. In M.E. Wroldstad and D.F. Fisher (eds.), Toward a New Understanding of Literacy, New York: Praeger.
- O'Hagan, C. (1962). English-medium teaching in Kenya, Overseas Education 34,3, 99-106.
- O'Hagan, C. (1964). Education and language, Teacher Education 4,3, 196-206.
- Olson, D. (1977). From utterance to text: The bias of language in speech and writing, Harvard Educational Review, 47, 257-281.
- Ong, W.J. (1971). Rhetoric, Romance and Technology: Studies in the Interaction of Expression and Culture Ithaca, NY: Cornell University Press.
- Palermo, D.S. and Molphese, D.L. (1972). Language acquisition from age 5 onwards, Psychological Bulletin 78(6), 409-428.
- Partee, B.H. (1982). Intensional logic and natural language. In T.W. Simon and R.J. Scholes (eds.) Language, Mind, and Brain, Hillsdale, NJ: Lawrence Erlbaum Associates.
- Polome, E.C. (1967). Swahili Language Handbook, Washington, DC: Center for Applied Linguistics.
- The Place of the Vernacular in Native Education. (1927). African no. 1110, London.
- Quigley, S.P., Steinkamp, M.W., Power, D.J. and Jones, B.W. (1978). Test of Syntactic Abilities: A Guide to Administration and Interpretation, Beaverton, OR: Dormac, Inc.
- Read, C.A., Zhang, Y., Mie, H., and Ding, B. (1986). The ability to manipulate speech sounds depends on knowing alphabetic writing, Cognition 24, 31-44.
- Report of the East African Literature Bureau. (1950). Nairobi, Kenya: Sessional Paper No. 1.
- Republic of Kenya. (1983). Development Plan for the Period 1984-1988, Nairobi, Kenya: Government Printer.
- Ridout, R. (1961). Better English, London: Ginn and Company, Ltd. (A complete primary course).

- Rosenthal, J.H. (1970). Preliminary psycholinguistic study of children with learning disabilities, Journal of Learning Disabilities 3, 391-395.
- Rosier, P. and Holm, W. (1980). Bilingual Education Series 8: The Rock Point Experience, Washington, D.C.: Center for Applied Linguistics.
- Russell, W.K., Quigley, S.P. and Power, D.J. (1976). Linguistics and Deaf Children, Washington, D.C.: Alexander Graham Bell Association for the Deaf.
- Saffran, E.M., Schwartz, M.F. and Marin, O.S.M. (1980). The word order problem in agrammatism: Part II, Production, Brain and Language 10, 263-280.
- Sakamoto, T. (1975). Preschool reading in Japan, Reading Teacher 29, 240-244.
- Sapir, E. (1921). Language, (Harvest Books edition), New York: Harcourt, Brace & World.
- Schlesinger, I.M. (1971). Production of utterances and language acquisition, In D.I. Slobin (ed.), The Ontogenesis of Grammar, New York: Academic Press.
- Scholes, R.J. (1970). On functors and contentives in children's imitation of word strings, Journal of Verbal Learning and Verbal Behavior 9, 167-170.
- Scholes, R.J. (1982). Grammar and sequencing in language. In T.W. Simon and R.J. Scholes (eds.), Language, Mind, and Brain, Hillsdale, NJ: Lawrence Erlbaum.
- Scholes, R.J., Brumfield, S., and Cohen, M. (1978). On the possible causes of syntactic deficits in congenitally deaf English users, American Annals of the Deaf 123, 5, 528-535.
- Scholes, R.J. and Klepper, B.R. (1982). The comprehension of double-object constructions in psycholinguistics and neurolinguistics, Language and Speech, 25, 1, 55-73.
- Scholes, R.J. and Willis, B.J. (1984). Grammars and agrammatism, Language and Communication, 4, 1, 1-25.
- Scholes, R.J. and Willis, B.J. (1987a). Language and literacy, Journal of Literary Semantics, 16, 1, 3-11.
- Scholes, R.J. and Willis, B.J. (1987b). Age and education in oral language skills, Developmental Neuropsychology 3, (3&4), 239-253.

- Scribner, S. and Cole, M. (1981). The Psychology of Literacy, Cambridge, MA: Harvard University Press.
- Scribner, S. and Cole, M. (1973). Cognitive consequences of formal and informal education, Science 182, 553-559.
- Semel, E.M. and Wiig, E.H. (1975). Comprehension of syntactic structures and critical verbal elements by children with learning disabilities, Journal of Learning Disabilities 8, 53-58.
- Sheffield, J. (1971). Education in the Republic of Kenya, United States Department of Health, Education and Welfare, Office of Education/OE14149. Washington, D.C.: United States Government Printing Office, Division of Public Documents.
- Sheridan, E.M. (1982). Early reading in Japan, Reading Teacher 21, 326-331.
- Slobin, D.I. (ed.). (1967). A Field Manual for Cross-culture Study of Acquisition of Communicative Competence Berkley, CA: University of California Press.
- Slobin, D.I. (ed.). (1971). The Ontogenesis of Grammar: A Theoretical Symposium, New York: Academic Press.
- Smith, F. (1984). Joining the Literacy Club, Victoria, B.C.: Abel Press.
- Smith, F. (1982). Understanding Reading, New York: Holt, Rinehart and Winston.
- Smith, M.E. (1941). Measurement of size of general English vocabulary, Genet Psychological Monograph, 24, 311-345.
- Smith, M.E. (1926). An investigation of the development of the sentence and the extent of vocabulary in young children, University of Iowa, Studies in Child Welfare 3,5.
- Taylor, I. (1976). Introduction to Psycholinguistics, New York: Holt, Rinehart and Winston.
- Taylor, N.E. and Blum, I.H. (1981). The effects of written language awareness on first grade reading achievement. Paper presented at the Annual meeting of the American Educational Research Association, Los Angeles, CA.
- Teale, W. (1984). Reading to young children: its significance for literacy development. In H. Goelman, A. Oberg and F. Smith (eds.) Awakening to Literacy Exeter, NH: Heinemann Educational Books.

- Tucker, G.R. (1974). The development of reading skills within a bilingual educational program. In S.S. Smiley, and J.C. Towner (eds.), Language and Reading, Bellingham, WA: Western Washington State College Press.
- Turner, A. (1977). Syntactic Aspects of the Language of the Mentally Retarded, M.A. Thesis, University of Florida, Gainesville, Florida.
- Turner, E.A. and Rommetviet, R. (1967). The acquisition of sentence voice and reversibility, Child Development 38, 649-660.
- Urch, G.E.F. (1968). The Africanization of the Curriculum in Kenya, University of Michigan Comparative Education Dissertation Series, No. 12, Ann Arbor, MI: The University of Michigan School of Education.
- Vogel, S.A. (1975). Syntactic Abilities in Normal and Dyslexic Children, Baltimore, Maryland: University Park Press.
- Wanyoike, E.N. (1982). Teacher Training Methodology Manual in Kiswahili for Lower Primary Classes in Kenya. African Studies Curriculum and Development Evaluation, No. 62. African Curriculum Organization, German Agency for Technical Co-operation. Nairobi, Kenya: Kenya Institute of Education, Nairobi University.
- Washington, B.T. (1904). Working with the Hands: Being a Sequel to "Up from Slavery," Covering the Author's Experience in Industrial Training at Tuskegee, New York: Doubleday, Page and Co.
- Wiig, E.H. and Roach, M.A. (1975). Immediate recall of semantically varied "sentences" by learning disabled adolescents, Perceptual Motor Skills 40, 119-125.
- Wilson, P.M. (1970). Simplified Swahili, Nairobi, Kenya: Kenya Literature Bureau.
- Zani, T.K. and Zani, Z.M. (1985). Hatua za Kiswahili: Masomo ya Msingi, Nairobi, Kenya: Heinemann Educational Books.
- Zurif, E., Caramazza, A. and Myerson, R. (1972). Grammatical judgements of agrammatic aphasics, Neuropsychologia 10, 405-419.

BIOGRAPHICAL SKETCH

Brenda J. Willis was born in 1953 and lived most of her life in Ruskin, Florida, a small agricultural community. After she graduated from a local high school in 1971, she attended the University of South Florida for a year before she was required to take on the responsibility of running her father's business. She eventually was able to return to school and received a B.A. in anthropological linguistics from the University of South Florida in 1978.

After graduating, she went to Greece and lived for a year on the island of Corfu where she worked in the tourism industry. She returned to her home town and completed a real estate development project which her father had begun and also became involved in community volunteer work. She worked as an instructor in several community-based English language centers servicing the migrant farm-labor population as well as Vietnamese and Haitian refugee populations. She entered the graduate program in linguistics at the University of South Florida and received her M.A. in 1983. While pursuing her degree she held both teaching and research assistantships.

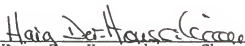
She began her doctoral studies in linguistics and African Studies at the University of Florida in the fall of

1982. During the time she was completing her required course work, she worked as an instructor in the Reading Center; a center designed to upgrade the skills levels of minority and special needs students. She was also granted a research assistantship from the Center for African Studies (1985-86) and a teaching assistantship from the Program in Linguistics (1988). The research for her doctoral dissertation was conducted during her year of residence in Kenya.

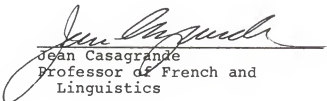
Ms. Willis has been a recipient of the Foreign Language Area Studies Fellowship (1983-84) for her study of Kiswahili. She was awarded a Fulbright Grant through the International Institute of Education for doctoral research in 1985. In 1987, she was selected as a regional finalist for the President's White House Fellowship. She is a member of various academic, civic and service organizations.

She and her husband, Dr. Robert J. Scholes, live in Gainesville, Florida. Among the many interests they share is an interest in literacy research. They have co-authored a number of articles in recent years.

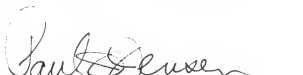
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Jean Casagrande
Professor of French and
Linguistics

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Paul J. Jensen
Professor of Speech

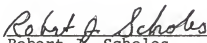
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This dissertation was submitted to the Graduate Faculty of the Program in Linguistics in the College of Liberal Arts and Sciences and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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